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Delivered at Charing Cross Hospital on Oct. 1st, 1908,

BY SIR PATRICK MANSON, M.D. ABERD., F.R.C.P. LOND., K.C.M.G., F.R.S.,

LECTURER ON TROPICAL DISEASES AT ST. GEORGE'S HOSPITAL AND CHARING CROSS HOSPITAL MEDICAL SCHOOLS AND AT THE LONDON SCHOOL OF TROPICAL MEDICINE.

MR. PRESIDENT AND GENTLEMEN,—In preparing the following remarks I have assumed that the council of Charing Cross Hospital Medical School have asked me to deliver this the seventh biennial Huxley lecture because they are impressed by the position attained by tropical medicine in recent years and because they know I have given some attention to the subject. I appreciate and am grateful for the compliment implied, although I fear I can do only scant justice in the short time at my disposal to what has become a large and important subject.

All must recognise that tropical medicine is a theme specially appropriate for a Huxley lecture, seeing that tropical medicine, so far as the etiology and prophylaxis of tropical disease are concerned, is in great measure a branch or development of one of those sciences so intimately associated with Huxley's name—natural history. Moreover, the success with which the study of tropical medicine has been attended is in great measure due to the employment of those methods of investigation and teaching so consistently and powerfully employed by that great master of natural science—namely, clearing the mind of tradition and cant, careful observation of facts, hypotheses based on fact, testing such hypotheses by experiment and by their consistency with other facts, and finally, if verified, the fearless application of the proved hypothesis in practice.

Some of you may recollect the opposition encountered by those of us who 10 or 12 years ago were endeavouring to make the study and teaching of tropical medicine a distinct department of medicine. That opposition has, I believe, subsided if not ceased altogether, for it is now generally recognised that this subdivision of medicine is a natural one and one practically necessary, one founded on a well-established principle. That principle, briefly stated, is this—namely, that the possible range of a geographically limited disease depends, not on the influence of climate or locality on the human body or on germs already established in the human body, but as they influence the disease germ itself in and during its passage from one human host to another human host—that is to say, on the disease germ while it is outside the human body. If as regards any given disease germ the climatic and local conditions in any given country are unfavourable to the germ while it is outside the human body, the germ may be imported time after time, but the disease it is responsible for will not spread or become established as an endemic. On the other hand, if the local and climatic conditions are favourable to the germ while outside the human body, once the germ is introduced, given the opportunity, the disease it is responsible for will surely spread.

It so happens that certain germs require for their successful passage from host to host a high atmospheric temperature, or they require animal intermediaries which flourish only in high atmospheric temperatures. These conditions being existent only in tropical or subtropical countries, or in temperate countries during the summer season, the disease produced by the germs referred to can originate and spread in warm countries or seasons only. Malarial disease and its germs are, perhaps, the most familiar example of this principle. Malarial disease is caused by a protozoal organism which in man lives in the red blood corpuscles. Under normal conditions the germ is powerless to leave its human host or to enter another human host. To effect this necessary translation it requires an insect intermediary—a particular kind of mosquito. This mosquito for its well-being, amongst other things, demands a high atmospheric temperature; therefore this insect flourishes in warm climates or in the warm season of temperate climates. Hence human malaria is a disease special to warm climates—that is to say, a tropical disease.

Besides malaria, I could adduce both from human and from veterinary pathology many additional illustrations of this principle. For example, yellow fever, African tick fever, trypanosomiasis, filariasis, certain kinds of spirochætiasis, and so on. In all of these an animal intermediary of tropical habit is necessary for the transmission of the germ and therefore of the disease.

There are other tropical diseases for the spread of which no such living intermediary is necessary; nevertheless, high atmospheric temperatures being required by their germs in their passage from host to host, these diseases are properly classified as tropical. In their case the germs require a warm medium in which to accomplish necessary developmental changes which, when complete, qualify the germ to effect successfully a lodgment in the human host. Ankylostomiasis is an example of this. If when it leaves the human host the egg of the ankylostome does not quickly meet with a warm moist nidus it perishes; if it meets with such a nidus the larva is hatched out and, opportunity serving, enters a new human host, and so the disease it gives rise to is spread.

It is this necessity on the part of the germ for either a tropical intermediary or for a warm medium, such as occur naturally only in tropical countries, that constitutes the main determining factor in the geographical distribution and limitation of tropical disease and which, so to speak, specialises the subject. This is the reason for, and the justification for, specialising the teaching and study of the subject, and this it is that determines the lines on which tropical medicine has to be studied and taught.

What might be described as a corollary pendant to the general principle that the intermediary or medium required by the disease germ is the agent that principally determines the distribution of tropical disease imposes welcome limitations to the field of study. The principal tropical diseases (I do not include in this the skin and the food diseases) are caused either by protozoa or by helminths. So far as we accurately know, none of these disease germs are bacterial. The reason for this fact, which pathologists are only beginning to appreciate, lies in the circumstance that the pathogenic bacteria are not materially affected, so far as their viability and transmission are concerned, by ordinary atmospheric temperature; neither do they require to undergo developmental changes outside the human body before they can enter another human body, and, therefore, although they may be favoured or the reverse by such, they are not absolutely dependent on any animal or other geographically limited medium. Several bacterial diseases which are often classed as tropical—for example cholera, certain kinds of dysentery, leprosy, plague, Mediterranean fever, &c., are not really tropical. Experience has shown that these diseases can flourish in any climate. It is only because those hygienic and social conditions most favourable to their spread are met with at the present day in greatest perfection in the tropics, that they are conventionally regarded as tropical; they have no more real claim to be regarded as tropical than tuberculosis or syphilis has. In times past, and even at the present day, they were or are common enough in some places or conditions in temperate or even in cold countries.

Thus in the study of tropical disease bacteriology may be relegated to quite a secondary place. The student's attention is confined almost entirely to protozoa and helminths, to the special vectors or media of these organisms, to their pathological effects, and to the prophylaxis and treatment of the diseases they give rise to.

I might mention in passing that those who plan schools or courses for the teaching of tropical medicine should recognise this large element of natural history in the subject and that if possible they should include in the teaching staff (1) a protozoologist, (2) a helminthologist, and (3) an arthropodologist (I say arthropodologist because the known intermediaries of the pathogenic protozoa and helminths are nearly all of them either insects, ticks, or crustaceans) in addition to the usual pathologist, systematic clinical and hygiene lecturers having at their disposal a suitable hospital with a tropical *clientèle*, besides a laboratory, museum, and

library. Such machinery I regard as essential for the efficient teaching of tropical medicine. It is towards this position of theoretically indicated efficiency that those of us who have been working for the London School of Tropical Medicine for the last ten years have been struggling, and to which, I am glad to be able to say, we have at last attained.

I have prepared a list of the principal tropical diseases with, so far as we know them, their germ causes and intermediaries. These tables (Tables I., II., and III.) indicate in synoptical fashion the leading facts in our present knowledge of the subject, and the many gaps that remain to be filled in. You can see from them how completely the principle I have enunciated as regulating in the main the distribution of tropical disease is substantiated. The tables also show well how much has been accomplished in recent years. If we regard, as I think we may, this recent progress as an earnest of what will be accomplished in the near future, it leads one to anticipate that within a very short period all the gaps in these tables will be filled in, and new diseases, new disease germs, and new and more reliable methods of diagnosis, prevention, and possibly of treatment be discovered.

In a Huxley lecture the discussion of a biological subject cannot be regarded as inappropriate, even if that subject implies a large amount of what in the present state of knowledge is necessarily of a highly speculative character. Huxley loved a biological problem. He was a great collector of facts, it is true—a great observer; but he tells us his interest in facts was chiefly in as far as they illustrated and led up to principles. In his search for and contemplation of facts, in his endeavour to arrive at principles, he recognised and insisted on the value of hypothesis. In his day, as at the present day, it was the fashion with some to decry and scoff at any hypothesis, however reasonable, that might be advanced in an attempt at explaining or coördinating facts. According to such people the only thing worthy the name of science is *fact*. Huxley, however, was not of this way of thinking. He held that in science hypothesis had a distinct and honourable place, that it was of the greatest value in stimulating and guiding observation and in bringing about discovery. Witness his strenuous advocacy of Darwinism, an advocacy so fully justified by result. Huxley, however, was ever careful to distinguish between hypothesis and fact, and it is in this spirit that I would bring before you some biological problems having important bearings on tropical pathology and possibly on phases of pathology other than tropical, and, also, certain hypotheses which may or may not be verified in the future, but which certainly suggest lines of work which, if pursued, could not fail to elicit new and important facts and perhaps sounder explanations than those I propose to offer.

In the largest and most important section of tropical diseases the germs (I shall take that of malaria as an example) are carried, as I have explained, from human host to human host by animal intermediaries, in this instance an anopheline mosquito. But the malaria mosquito does not function merely as a simple mechanical vector, in the way that the physician's lancet does when it transfers the vaccinia

TABLES OF TROPICAL DISEASES SHOWING OUR PRESENT KNOWLEDGE OF THEIR ETIOLOGY AND MEANS OF PROPAGATION.

TABLE I.—*Diseases Due to Vegetable Parasites.*

Name of disease.	Causative agent.	Mode of transmission.
Diseases due to bacteria—		
Malta fever.	*Micrococcus melitensis* (Hughes, 1893).	May be conveyed in milk from infected animals (goats, cows), also possibly mosquitoes.
Plague.	*Bacillus pestis.*	Inoculation by fleas—contaminated food.
Leprosy.	,, *lepræ.*	Unknown.
Dysentery (bacillary form).	,, *dysenteriæ.*	Contaminated food or water. Flies (especially *Musca domestica*) play an important rôle in the dissemination of these diseases.
Typhoid fever.	,, *typhosus.*	
Cholera.	*Vibrio comma* (Schröter, 1886).	
Diseases due to fungi—		
Mycetoma. Actinomycotic mycetoma.	*Discomyces bovis* (Harz, 1877).	Probably inoculated through the skin by contaminated plant thorns or spikelets.
Mycetoma. Vincent's white ,,	,, *maduræ* (Vincent, 1894).	
Mycetoma. Nicolle's ,, ,,	*Aspergillus nidulans* (Eidam, 1883).	
Mycetoma. Bouffard's black ,,	,, *bouffardi* Brumpt, 1906.	
Mycetoma. Classic ,, ,,	*Madurella mycetomi* (Laveran, 1902).	
Mycetoma. Brumpt's white ,,	*Indiella mansoni* Brumpt, 1906.	
Mycetoma. Bouffard's ,, ,,	,, *somaliensis* Brumpt, 1906.	
Ringworm. Tinea imbricata.	*Trichophyton concentricum* R. Blanchard, 1895.	
Ringworm. ,, albigena.	,, *albiscicans* Niewenhuis, 1908.	
Ringworm. ,, alba.	,, *macfadieni* (Castellani, 1908).	
Ringworm. ,, cruris.	,, *cruris* Castellani, 1905.	
Ringworm. ,, sabouraudi.	,, *blanchardi* Castellani, 1905.	
Ringworm. ,, nigro-circinata.	,, *ceylonense* Castellani, 1908.	
Ringworm. ,, intersecta.	,, *castellanii* Perry, 1907.	
Ringworm. ,, flava.	*Malassezia tropica* Castellani, 1908.	
Ringworm. ,, nigra.	*Fozia mansoni* Castellani, 1908.	
Pinta.	Various as yet undetermined species of *Aspergillus*, *Penicillium*, *Monilia*, and *Montoyella*.	
Piedra.	*Trichosporum giganteum* Behrend, 1890.	
Other tropical forms of nodular trichomycosis.	,, *krusei* (Castellani, 1908).	
	,, *fozi* Castellani, 1908.	
Tropical blastomycoses.	*Saccharomyces canliei* Castellani, 1908.	
	,, *samboni* Castellani, 1908.	
	Cryptococcus lowi Castellani, 1908.	
Tropical sporotrichosis.	*Sporotrichum indicum* Castellani, 1908.	
Erythrasma.	*Discomyces minutissimus* (Burchardt, 1859).	
Pityriasis versicolor.	*Malassezia furfur* (Ch. Robin, 1853).	
Aspergillosis of hairy parts.	*Aspergillus barbæ* Castellani, 1908.	
Penicillosis of hairy parts.	*Penicillium barbæ* Castellani, 1908.	

TABLES OF TROPICAL DISEASES SHOWING OUR PRESENT KNOWLEDGE OF THEIR ETIOLOGY AND MEANS OF PROPAGATION (*Continued*).

TABLE II.—*Diseases Due to Animal Parasites.*

Name of disease.	Causative agent.	Mode of transmission.
Diseases due to Protozoa—		
Malarial fevers. Quartan.	*Plasmodium malariæ* (Laveran, 1881, *sensu stricto*).	Inoculated by mosquitoes of the sub-family *Anophelinæ*.
Malarial fevers. Tertian.	,, *vivax* (Grassi and Feletti, 1890).	Inoculated by mosquitoes of the sub-family *Anophelinæ*.
Malarial fevers. Subtertian.	*Laverania malariæ* (Grassi and Feletti, 1890).	Inoculated by mosquitoes of the sub-family *Anophelinæ*.
Malarial fevers. Quotidian.		
Trypanosomiasis (sleeping sickness).	*Trypanosoma gambiense* (Dutton, 1902).	Inoculated by *Glossina palpalis* and possibly other tsetse flies.
Kala-azar.	*Leishmania donovani* (Laveran and Mesnil, 1903).	Inoculated by *Cimex rotundatus* (suggested).
Oriental sore.	,, *furunculosa* (Firth, 1891).	Unknown.
Relapsing fever. Eurasian form.	*Spirochaudinnia recurrentis* (Lebert, 1874).	Inoculated probably by *Cimex lectularius* and *Pediculus corporis*.
Relapsing fever. African form.	,, *duttoni* (Novy and Knapp, 1906).	Inoculated by *Ornithodoros moubata*.
Yaws.	*Treponema pertenue* (Castellani, 1905).	Conveyed by flies on abraded surfaces—contact.
Dysentery. Balantidium dysentery.	*Balantidium coli* (Malmsten, 1857).	Fouled water or food, contaminated by sewage, flies, &c.
Dysentery. Amœbic ,, / Tropical liver abscess	*Entamœba histolytica* (Schaudinn, 1903).	Fouled water or food, contaminated by sewage, flies, &c.
Diseases due to Metazoan Parasites—		
Trematode infection (Distomatosis). Pulmonary (endemic hæmoptysis).	*Paragonimus westermanii* (Kerbert, 1878).	Probably food or water containing cercaria or other larval form.
Trematode infection (Distomatosis). Hepatic.	*Clonorchis sinensis* (Cobbold, 1875).	Probably food or water containing cercaria or other larval form.
Trematode infection (Distomatosis). Hepatic.	*Opisthorchis noverca* Braun, 1903.	Probably food or water containing cercaria or other larval form.
Trematode infection (Distomatosis). Hepatic.	*Fasciola hepatica* Linnæus, 1758.	Probably food or water containing cercaria or other larval form.
Trematode infection (Distomatosis). Intestinal.	*Fasciolopsis buskii* (Lankester, 1857).	Probably food or water containing cercaria or other larval form.
Trematode infection (Distomatosis). Intestinal.	,, *rathouisi* (Poirier, 1887).	Probably food or water containing cercaria or other larval form.
Trematode infection (Distomatosis). Intestinal.	*Heterophyes heterophyes* (Bilharz, 1852).	Probably food or water containing cercaria or other larval form.
Trematode infection (Distomatosis). Intestinal.	*Gastrodiscus hominis* (Lewis and McConnell, 1876).	Probably food or water containing cercaria or other larval form.
Trematode infection (Distomatosis). Intestinal.	*Cladorchis watsoni* (Conyngham, 1904).	Probably food or water containing cercaria or other larval form.
Trematode infection (Distomatosis). Venal. (Endemic hæmaturia.)	*Schistosoma hæmatobium* (Bilharz, 1852).	Possibly by swallowing cercaria or other larval form. Infection through the skin, the urethra, or the anus suggested.
Trematode infection (Distomatosis). Venal. (Endemic hæmaturia.)	*Schistosoma mansoni* Sambon, 1907.	Possibly by swallowing cercaria or other larval form. Infection through the skin, the urethra, or the anus suggested.
Trematode infection (Distomatosis). Venal. (Endemic hæmaturia.)	,, *japonicum* Katsurada, 1904.	Possibly by swallowing cercaria or other larval form. Infection through the skin, the urethra, or the anus suggested.
Cestode infection (Tæniasis). Intestinal.	*Tænia saginata* Goeze, 1782.	By eating beef infected with larval form (*Cysticercus bovis*).
Cestode infection (Tæniasis). Intestinal.	,, *africana* Linstow, 1900.	Possibly by eating the flesh of the zebu.
Cestode infection (Tæniasis). Intestinal.	,, *hominis* Linstow, 1902.	Food containing cysticercus.
Cestode infection (Tæniasis). Intestinal.	,, *solium* (Linnæus, 1785).	By eating under-cooked or under-cured pork.
Cestode infection (Tæniasis). Intestinal.	*Hymenolepis nana* (Siebold, 1852).	Food soiled by the excrements of rats and mice
Cestode infection (Tæniasis). Intestinal.	,, *diminuta* (Rudolphi, 1819).	Food containing infected larva or imago of *Asopia farinalis*.
Cestode infection (Tæniasis). Intestinal.	*Davainea madagascariensis* (Davaine, 1869).	Food or water contaminated by cockroaches probable carriers of cystic stage.
Cestode infection (Tæniasis). Intestinal.	,, *asiatica* (Linstow, 1901).	Unknown.
Cestode infection (Tæniasis). Intestinal.	*Dipylidium caninum* (Linnæus, 1758).	May be conveyed by dogs in licking after biting infected fleas or lice.
Cestode infection (Tæniasis). Intestinal.	*Dibothriocephalus latus* (Linnæus, 1758).	Infection [probably takes place through eating fish.
Cestode infection (Tæniasis). Intestinal.	*Diplogonoporus grandis* (Blanchard, 1894).	Infection [probably takes place through eating fish.
Cestode infection (Tæniasis). Somatic. (Hydatid disease.)	*Echinococcus granulosus* (Batsch, 1786; Zeder, 1803).	Contaminated food or water. Hands soiled in petting dogs.
Cestode infection (Tæniasis). Somatic.	*Sparganum mansoni* (Cobbold, 1882).	Probably by means of water.
Cestode infection (Tæniasis). Somatic.	,, *baxteri* Sambon, 1907.	Probably by means of water.
Cestode infection (Tæniasis). Somatic.	,, *proliferum* (Ijima, 1905).	Probably by means of water.
Roundworm infection. Ankylostomiasis.	*Agchylostoma duodenale* Dubini, 1843.	Either passively by means of contaminated food or by soiled hands, or actively through the skin.
Roundworm infection. Ankylostomiasis.	*Necator americanus* (Stiles, 1902).	Either passively by means of contaminated food or by soiled hands, or actively through the skin.
Roundworm infection. Strongyloidosis (Cochin China diarrhœa).	*Triodontophorus diminutus* Railliet and Henry, 1905.	Unknown.
Roundworm infection. Strongyloidosis (Cochin China diarrhœa).	*Strongyloides stercoralis* (Bavay, 1877).	Either passively by means of contaminated food, or actively through the skin.
Roundworm infection. Ascariasis.	*Ascaris lumbricoides* Linnæus, 1758.	Contaminated water, vegetables, and fruits. Flies may act as disseminators.
Roundworm infection. Oxyuriasis.	*Oxyuris vermicularis* (Linnæus, 1758).	Contaminated food. Soiled hands. Flies may disseminate the eggs.
Roundworm infection. Trichocephaliasis.	*Trichuris trichiura* (Linnæus, 1771).	Contaminated food or water.
Roundworm infection.	*Œsophagostomum brumpti* Railliet and Henry, 1905.	Probably by means of contaminated water.
Roundworm infection.	*Physaloptera mordens* Leiper, 1907.	Unknown.
Roundworm infection.	*Gnathostoma siamense* (Levinsen, 1889).	Unknown.

TABLES OF TROPICAL DISEASES SHOWING OUR PRESENT KNOWLEDGE OF THEIR ETIOLOGY AND MEANS OF PROPAGATION *(Continued)*.

TABLE II.—*Diseases Due to Animal Parasites (Continued)*.

Name of disease.	Causative agent.	Mode of transmission.
Roundworm infection. — Dracunculosis.	*Dracunculus medinensis* (Linnæus, 1758).	By means of water containing infected cyclops. Possibly actively through the skin.
Roundworm infection. — Filariasis.	*Filaria bancrofti* (Cobbold, 1877).	Inoculated by mosquitoes.
	,, *loa* (Cobbold, 1864).	Probably inoculated by blood-sucking flies.
	,, *perstans* (Manson, 1891).	*Ornithodoros moubata* and other *argasidæ* (suggested).
	,, *demarquayi* (Manson, 1895).	Unknown.
	,, *volvulus* (Leuckart, 1893).	
	,, *magalhæsi* (Blanchard, 1895).	
	,, *taniguchii* (Penel, 1905).	
	,, *(microfilaria) powelli* (Penel, 1905).	
	,, ,, *philippinensis* (Ashburn and Craig, 1906).	
Tongue-worm infection.	*Porocephalus armillatus* (Wyman, 1848).	Probably by water contaminated by infected pythons.
	,, *moniliformis* (Diesing, 1836).	
Subcutaneous insects.	*Sarcopsylla penetrans* (Linnæus, 1758).	Penetrates actively through the skin.
	Compsomyia macellaria (Fabricius, 1794).	Eggs laid by parent fly on the surface of wounds or in natural openings.
	Dermatobia hominis (Say, 1822).	Probably eggs accidentally swallowed.
	Ochromyia anthropophaga (Em. Blanchard).	
	Cordylobia anthropophaga (Grünberg, 1903).	
	Bengalia depressa (Walker).	

TABLE III.—*Diseases of Unknown Etiology*.

Name of disease.	Causative agent.	Mode of transmission.
Yellow fever.	Probably due to protozoa.	Inoculated by *Stegomyia callopus* and possibly other species.
Blackwater fever.		Possibly inoculated by ticks or other blood-sucking arthropoda.
Typhus fever.		Probably inoculated by *Pediculus corporis* or *cimex lectularius*.
Rocky Mountain spotted fever.		Inoculated by *Dermacentor reticulatus*.
Japanese river fever.		,, ,, a species of *Trombidium* in its larval form.
Pellagra.		Ascribed to the eating of unsound maize.
Beri-beri.		,, ,, ,, rice.
Epidemic dropsy.	Unknown.	Unknown.
Climatic bubo.		
Dengue.	Probably a protozoon.	Inoculated by mosquitoes of the sub-family *Culicinæ*.
Simple continued fever.	Unknown.	Unknown.
Low fever.		
Non-malarial remittent.		
Double continued fever.		
Seven days' fever.		
Three days' fever.		
Hyperpyrexial fever.		
Hill diarrhœa.		
Sprue.		
Infantile biliary cirrhosis.		
Ponos.		
Verruga peruana.		
Chappa.		
Epidemic gangrenous rectitis.		
Ulcerating granuloma of pudenda.	Unknown (Wise has found a spiroschaudinnia; Donovan a saccharomyces).	
Goundou (Anakure).	Unknown.	
Ainhum.		
Onyalai.		
Big heel.		
Tropical phagedæna.		

germ from arm to arm. The mosquito not only conveys the malaria germ but it also serves as a medium in which that germ undergoes certain developmental changes necessary for its existence as a species, as well as for its successful introduction into a fresh human host. These changes are of a sexual nature and include impregnation of the female malaria germ by the male malaria germ, and result in the development of a multitude of young malaria germs which, should they chance on the opportunity of being introduced into human blood by their mosquito nurse and vector when she again bites a human victim, live and multiply, generation following generation for any time up to two or three years. Until the developmental changes occurring in the mosquito, changes which take some ten days to effect, are completed the mosquito may bite but she will not infect. The same principle holds good in the case of those other animal-intermediary-using protozoal germs whose life-histories have been worked out, and we are justified by analogy in conjecturing that they also apply to many similar protozoal germs whose life-histories have as yet not been fully ascertained.

In a word, certain blood-haunting protozoa requiring an insect or other arthropod vector make use of that vector as a medium for sexual development. May we regard this as a general law applicable to *all* such blood-haunting protozoa?

Unfortunately, there are certain of these pathogenic protozoa in respect to which, notwithstanding their employment of an insect or other arthropod vector, careful research by highly trained and competent investigators has failed to demonstrate convincingly sexual changes within their respective vectors. The trypanosomes, now known to be a large and important class of pathogenic protozoa, are notorious examples of this. An indubitable sexual stage of the germ of sleeping sickness, *Trypanosoma gambiense*, the most important of these, has not hitherto been clearly demonstrated in its vector, the tsetse fly, *Glossina palpalis*.

I shall endeavour to examine the case as regards this sleeping sickness trypanosome, for, depend upon it, if the law I have formulated applies to this trypanosome, or any trypanosome for that matter, it applies to all trypanosomes; if it does not apply to this trypanosome it does not apply to any trypanosome. If there be such a law it is of the utmost practical importance that we should not merely suspect its existence but that we should be sure of it. The subject is of more than theoretical interest. Accurate knowledge is the true and proper basis of practical medicine, especially of preventive medicine. Witness what it has done for the prevention of malaria and yellow fever. Half knowledge means half-hearted measures; full knowledge means hopefulness in endeavour, precision in directing, and economy in carrying out.

I propose to deal with the arguments both for and against this what I might designate hypothetical law, taking, as I have said, the sleeping sickness trypanosome as a text. I shall allude, though very briefly, to the arguments in favour of the law, more fully to those against it.

As regards the former, a principal argument is based on analogy. I am fully aware that this method of reasoning must not be carried too far. It has a certain value, however; in the present instance it is distinctly favourable.

There can no longer be any doubt that the trypanosome of sleeping sickness is conveyed principally, although perhaps not exclusively, by the tsetse fly, *Glossina palpalis*. Direct experiment—the correspondence of the topical as well as of the regional distribution of the fly and of the disease—practically proves this. If the fly acts merely as a mechanical vector of the trypanosome, why is the trypanosome not conveyed more frequently than is the case by other biting insects, such as mosquitoes, fleas, bugs, tabanidæ, &c., and therefore to be found along with its disease, sleeping sickness, not merely, as is the case, on the banks of African rivers and on the shores of African lakes, but everywhere where man-biting insects occur? You can vaccinate with a lancet, a needle, or even with a thorn; in fact, with anything that will scratch. Surely this predilection of the trypanosome for *Glossina palpalis* must be that *Glossina palpalis* is not merely mechanically serviceable to the trypanosome but physiologically necessary. What more probable than that this physiological necessity is identical with that of those other protozoal organisms under similar circumstances whose life-histories have been ascertained—namely, sexual development.

Most zoologists hold that all animals, protozoa as well as metazoa, require from time to time to undergo sexual changes. It is true that with many of the protozoa reproduction is effected principally by a process of division or by a process of budding carried through during many generations, hundreds or thousands it may be. But there comes a time, even in these, when the asexual reproductive energy is spent, as it were, and when the organism concerned to avert its extinction as a species has to assume sexual characters and reproduce sexually, a process which in some mysterious way resuscitates its asexual reproductive faculty, thereby enabling it once more to revert to simple division or budding for another hundred or thousand or more generations. It is so as regards the malaria parasite and its congeners, and it has been proved to be so as regards the humbler fresh water amœba. Surely the same must apply to organisms so highly developed as the trypanosomes. In those blood-haunting protozoa whose life-history we know—again I must adduce the malaria parasites—this sexual process is carried out in the insect vector, the mosquito, so may it be with the trypanosome in its insect vector, the tsetse fly. Indeed, special forms of the trypanosome occur in the blood of the vertebrate host which, in the opinion of some observers, are early sexual forms possessing sexual characters which are found to become more accentuated as they are followed into the alimentary canal of the tsetse fly. These forms, which though alive, are, as has been proved experimentally, incapable of multiplying in the vertebrate as the asexual forms so readily do. The reason for this failure of a particular phase of an organism otherwise so infective to infect is conjectured to be that the function of the phase concerned being sexual it lies outside the human body and can be carried out only in its appropriate medium—that is to say, the tsetse fly.

Such are the leading arguments in favour of a sexual phase within its insect vector in the case of *Trypanosoma gambiense*. Similar arguments apply to similar protozoa. These arguments distinctly support the law I plead for.

The leading arguments against such a law, against the occurrence of a sexual phase in the insect vectors of trypanosomes and similar protozoa, are: (1) a sexual phase has not been conclusively demonstrated in any trypanosome; (2) if there be a sexual phase it may be passed in the vertebrate and not in the insect host; (3) the trypanosomes can be inoculated artificially, sexual changes may therefore be unnecessary for their propagation; and (4) an insect intermediary is apparently unnecessary in at least one species of trypanosome and therefore is not a biological necessity in *Trypanosoma gambiense* or in any species of trypanosome.

1. A sexual phase has not been conclusively demonstrated in any trypanosome. This is one of those negative arguments to which experience in other departments of natural history has shown that too much weight must not be assigned. We must bear in mind the difficulty in working with an organism so minute as a trypanosome and also with one so refractory to experimentation and dissection as a tsetse fly. Several forms under such conditions might readily escape detection. The more or less positive argument of analogy may very well be set against this negative argument of non-detection.

2. If the trypanosome does possess a sexual phase this may be passed, as in the case of certain nematodes—notably the blood worms—in the vertebrate and not in the invertebrate host. Indeed, Breinl and Kinghorn have shown that in *Trypanosoma lewisi* and in *Trypanosoma gambiense* there occur at more or less definite intervals certain cytological phenomena which these observers suggest may be of a sexual nature. If this suggestion represents the truth then the respective insect intermediaries of these parasites may function merely as mechanical carriers. The observations referred to, though of great interest, have not as yet been carried to that point which warrants the conclusion that the cytological changes in question are really of a sexual nature. Even supposing they are of this nature, it does not follow that the sexual process is concluded in the vertebrate or that they are not preliminary to further and final changes in the insect, as in the case of the plasmodidæ.

3. It has been argued that as the trypanosomes can be successfully inoculated through a long series of vertebrate hosts their propagation does not necessitate at any time a sexual stage in the invertebrate intermediary. I do not attach much importance to this argument. We know of other protozoal germs which can be similarly transmitted

in the laboratory but which in nature are transmitted solely by the insect intermediaries in which they have necessarily undergone sexual changes. The malaria and yellow fever germs have been transmitted artificially many times by blood inoculation from man to man, yet no one can deny that in nature the mosquito is the appropriate transmitter of these germs. Stress has been laid on the fact that in our laboratories the same strain of trypanosomes has been passed from vertebrate to vertebrate through many hundreds of generations and that as yet there has been observed no sign of diminishing vigour or inoculability in the parasites, such as might be interpreted as indicating the approaching necessity for sexual resuscitation. So far as I know, the experiment has not been tried, but I have no doubt the malaria parasite could be similarly transmitted from man to man for many, perhaps hundreds, of generations. It is so transmitted in the same man and that without sexual reinvigoration. Nevertheless we know, unless it is again passed through a mosquito, that it dies out spontaneously in every instance and in a space of time something less than three years. Perhaps if transferred to a fresh blood it would live even longer than this, even without sexual reinvigoration, just as certain amœbæ can be kept alive asexually beyond their natural term by change of culture medium. Some trypanosome infections, including that of sleeping sickness, we know are normally longer lasting than malarial infections; it is reasonable, then, to think that they are proportionately more enduring when transmitted artificially. The argument based on inoculation experiments is, therefore, in my opinion, of little weight.

4. The fourth argument against a general law that blood protozoa requiring arthropod vectors use these vectors as a medium for sexual development is, in my opinion, the most formidable of any hitherto advanced. It is based on the mode in which the virus of the horse disease known as dourine is conveyed. Dourine is a characteristic trypanosome disease. In nature it is contracted during coitus. It can readily be conveyed to other animals, but it affects principally stallions, which convey it to, and, presumably, acquire it from, brood mares. It is conveyed and contracted naturally, therefore, in the same way as syphilis—that is to say, by contact of mucous surfaces. From this it might be inferred that a sexual stage in an insect is unnecessary for this particular trypanosome; and if unnecessary for this trypanosome unnecessary for any species of trypanosome.

Believing in the uniformity of natural operations and in the necessity for sexual reinvigoration in all animals, including the protozoa; and believing that a sexual stage occurs in the case of other trypanosomes, I believe it must occur in that of dourine—*Trypanosoma equiperdum*; and, as with other trypanosomes, that it is passed in some insect as yet unrecognised.

For reasons which I shall presently explain, I conjecture that this insect may be one which itself has acquired parasitic or semi-parasitic habits; and, consequently, seldom passing from horse to horse, is not the usual transmitter of the trypanosome from horse to horse. To compensate for this inefficiency of its sexual medium as a transmitter, the trypanosome by a kind of reversion to ancestral habit, has taken on the habit of contact transmission during its asexual stage, retaining, however, the insect for sexual reinvigoration.

This suggestion will, I daresay, appear to some, probably to most of my hearers, as being so wildly hypothetical as to be scarcely worth considering. But when we come to examine it a little carefully I think we shall find that, after all, it is not without support, or so highly improbable as at first sight it appears to be. Moreover, should it be established, it is conceivable that it might suggest an explanation for some of the many things in epidemiology that are still hard to understand.

That so many parasites require two hosts, a definitive and an intermediary, zoologically so dissimilar as vertebrate and insect or mollusc, has always appeared to me a remarkable phenomenon and one difficult to explain on Darwinian principles. And yet undoubtedly it conforms to these principles. One can readily understand how an animal, originally free, can adapt itself to parasitic life on another animal, but it is very difficult at first sight to explain how it can accustom itself to life in two absolutely different hosts—hosts so far removed from each other zoologically as a man and a mosquito; and, further, that both man and mosquito are essential for its welfare; and, moreover, that in one host—in this case the vertebrate—the parasite has an asexual life and in the other host—the insect—a sexual life. How by any recognised principle of evolution can a life so complicated be attained or explained?

I would with great diffidence and without entering on detail submit the following hypothesis. Vertebrates, arthropods, molluscs, helminths, protozoa have all of them sprung from a common ancestor, or, if not from one common ancestor, from similar ancestors. Very early in the growth of the family tree a certain originally free organism became at first intermittingly, then finally and permanently, parasitic on another organism. In time a definite host and parasite relationship was established between the two. From the original host varieties, species, genera, and so on were gradually evolved. Concurrently with this evolution in the host the parasite, just as its host had done, adapting itself to its changing environment, evolved new varieties, species, genera, &c.

In the course of these concurring evolutionary processes there came a time when, say, the insect and vertebrate strains began to diverge. A certain organism was parasitic on the common insect-vertebrate ancestor. The process of evolution in this host-ancestor being necessarily very gradual, the parasite—as is the case with many existing parasites—was capable of adapting itself to the closely related varieties of the host, among others to the insect-resulting strain and to the vertebrate-resulting strain. Divergence in these host-strains continuing, varieties became species, species genera, and so on, until insect and vertebrate, as they exist at the present day, were evolved.

In the early stages of the evolutionary process the parasite could live in either vertebrate strain or insect strain of host indifferently, but there came a time when it was often more to the advantage of the parasite to pass its sexual life in the ancestral insect strain, its asexual life in the ancestral vertebrate strain. In the process of evolution this at first more or less accidental habit—I can hardly apply the expression "optional habit" to a parasite—became fixed and has been transmitted, so that now the sexual life of the malaria parasite is passed in the mosquito, its asexual life in man.

This is my explanation of the double life, if I may so describe it, of so many and so widely separated parasites, including protozoa, nematodes, trematodes, and cestodes. I can explain it in no other way; the explanation I offer seems to harmonise the facts and to conform to the doctrines of evolution.

In the case of every double-host-using parasite it is obvious that both hosts must be organisms that are in frequent and fairly close association, otherwise the parasite employing them would lack the opportunity of passing from one to the other. Thus it comes about that the parasites of the herbivora are at another stage of their existence parasites of the carnivora; the hydatid of the sheep, the tapeworm of the dog; the trematode of the sheep, the cercaria of the swamp-haunting mollusc; the blood worms of man, the larval nematode of the mosquito. This is obvious; opportunities of passage from host to intermediary, and from intermediary to host, must be of sufficient frequency, otherwise the parasite demanding them would necessarily cease to exist.

At first sight one would think that the more intimate and frequent the association of definitive and intermediary host the better the opportunity for the parasite. Thus one would think that a louse, or an itch insect, or a *Demodex folliculorum*, being permanently in residence on its vertebrate associate, would be a more suitable intermediary for a malaria parasite than the mosquito is. But we know that it is not so, and one of the reasons for this undoubtedly is that these ectozoa comparatively rarely pass from vertebrate to vertebrate; whereas the mosquito is in the habit of biting one man one day, and it may be quite another man a few days later, and so constitutes a most efficient go-between and vector of blood parasites.

But now another principle comes into operation in this complex of parasitism. Insect and vertebrate life have been evolved side by side, springing from a common ancestor. I have endeavoured to explain in what way the parasites they possess in common have been evolved concurrently and along with them, and I have attempted an explanation of the phenomenon of definitive and intermediary host, and to show that this is no fortuitous relationship but a necessary one, and one in entire harmony with the

doctrines of evolution. I have endeavoured to explain how a certain intimacy of association between intermediary and definitive host is essential for the parasites employing them, and how this association must not be confined exclusively, as regards either host or intermediary, to a single individual of each or either.

The protozoa and possibly the nematodes acknowledge, in my opinion, a very remote ancestry—that is to say, they became parasitic very early in the growth of the phylogenetic tree. There are other parasites, however, which manifestly must have adopted the parasitic habit very much later in the history of the animal kingdom. Certain insects, which probably from the beginning were closely associated with vertebrates and lived on the juices of these vertebrates, finding that they no longer required their wings, gradually dropped these wings and permanently attached themselves to their vertebrate food source. Such are many of the hemipterous and apterous insects, lice, &c. Similarly the ancestors of the acari, of some of the ticks, and other ectozoa have gradually fallen into complete or partial parasitic habits; certain bugs and ticks are even at the present day in process of acquiring this habit. I have no doubt that, as with the modern mosquitoes, ticks, and bugs, the ancestors of the existing huge ectozoal fauna of man and other vertebrates fostered parasites which they possessed in common with their respective vertebrate associates. What, you may ask, has become of these parasites? Have they failed to do what other parasites and the hosts of other parasites have succeeded in doing; have they failed to adapt themselves to their gradually changing environment? And if they have succeeded in adapting themselves how did they manage to overcome certain obvious difficulties, for example, that which I have indicated as being so necessary to such parasites, the go-between habit of at least one of the hosts, that necessity which is so efficiently subserved in the case of the malaria parasite by the mosquito?

I believe that this has been effected by a process of reversion, the asexual form of the parasite gradually re-acquiring, for purposes of propagation, the capacity and habit of direct passage from vertebrate to vertebrate, the necessity for sexual reinvigoration from time to time being still subserved by the ectozoal descendant of an originally free insect or other arthropod.

That is how I would explain the apparent absence of an insect intermediary in the trypanosome disease, dourine. Some apterous, hemipterous, or semi-parasitic insect phylogenetically allied to the tsetse flies is its intermediary. This insect has not been found, probably because it has not been looked for in the proper way.

I hold, therefore, that the existence of a sexual phase in the sleeping sickness trypanosome, *Trypanosoma gambiense*, and other trypanosomes is more than probable, that it has not been disproved, and that the argument founded on the natural direct communicability of dourine in the apparent absence of an insect intermediary for its germ, *Trypanosoma equiperdum*, is not valid, and that the evidence hitherto adduced is distinctly in favour of a law to the effect that blood-haunting protozoa having arthropod vectors require, and make use of, these vectors for necessary sexual development. Why the sexual stage of these parasites is passed in the arthropod and not in the vertebrate I cannot explain, any more than I can explain the contrary arrangement which obtains in the blood-haunting nematodes, the sexual stage in their case being passed in the vertebrate host, the asexual in the insect.

I have no doubt, while listening to these remarks, it has occurred to some of you, as it has often occurred to me, that the principles I have endeavoured to express have a wider application than that which I have directly indicated, that our disease germs and our ectozoa—insignificant though the latter appear to be—are correlated more frequently than is generally suspected, that, in fact, there is a necessary relationship between them. Indeed, in some instances we are beginning to find this to be the case. I have no doubt some of you dimly perceive that the whole of this subject, which recent studies in tropical medicine have done so much to develop, may have important practical bearings, that it is not an exclusively tropical one, and that in the near future it may find an application in the explanation of the pathogenesis and, therefore, an application in the prevention of many diseases of temperate as well as of tropical climates. It is a tempting theme to enlarge on. I must forbear. I feel I have already been sufficiently hypothetical. Perhaps some future Huxley lecturer will atone for my sins in this respect and supply the facts which, I acknowledge, are still lacking fully to establish the several hypotheses I have endeavoured to express.

THE TREATMENT OF INOPERABLE CANCER.[1]

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WHEN the Central Committee of the International Society of Surgery honoured me in March, 1906, by asking me to read a paper at the Congress in 1908 on the treatment of inoperable cancer they were, I believe, aware that I had opened a discussion on the same subject at the meeting of the British Medical Association at Manchester in August, 1902. It is now, as I write, about five and a half years since that discussion took place, and with but little exception the question stands to-day much as it did then. Increased experience and the mere lapse of time have enabled some of the methods then under consideration to be more justly appraised, and certain others which have since then been claimed to be cancer cures have been brought forward, but there has been, unfortunately, no definite advance towards the discovery of a reliable cure. If, therefore, I borrow somewhat freely from my former paper, it is on the old Greek principle that having once said what one wished to say, one can hardly say it twice, *δὶς δὲ οὐκ ἐνδέχεται*, except by repeating one's own words.

I will begin by quoting verbatim the definition I gave in 1902 of the meaning of the terms the "treatment of inoperable cancer."

"The term 'cancer' is used in a general sense to include all forms of malignant new growths, and therefore embraces rodent ulcer, sarcoma, and lympho-sarcoma, and endothelioma as well as epithelioma and other varieties of carcinoma. The term 'inoperable' means that the disease cannot be entirely eradicated, or permanent immunity hoped for, by a cutting operation, or by the actual cautery, or any escharotic aiding the knife. It does not imply that malignant disease is of constitutional as distinct from local origin and that as such it is ineradicable. On the contrary, I take it for granted that cancer is at first, and so far as rodent cancer is concerned throughout, a local disease. But even on this view there are four groups of inoperable cases. They are: (1) primary cancer affecting inaccessible parts and organs; (2) primary cancer which though originating in an accessible part or organ of the body has been allowed to extend beyond the limits within which an operation is prudent and complete removal possible; (3) certain cases of acute diffuse carcinoma and very rapidly growing or widely infiltrating new growths of exceptionally virulent character; and (4) recurrent cancer, where the disease has recurred in multiple metastatic foci or in parts beyond the limits of removal. Many of the cases included in these groups are submitted to operation for the purpose of palliating symptoms or prolonging life. Hence the term 'treatment' as applied to inoperable cancer means one of two things: (1) the employment of remedies and methods other than the knife, to cure, ameliorate, or retard the disease, as well as to prevent relapses after its removal; or (2) the employment of the knife to give relief from pain, to prolong life, to restore function, and otherwise to make the patient's condition more tolerable."

PALLIATIVE OPERATIONS.

In a paper which is intended merely to introduce a discussion it is of course quite impossible to consider all the many palliative operations which are resorted to in cancer of the various organs and regions of the body. Only the principal methods employed to combat cancer in the organs and parts most commonly affected will be referred to and those only with regard to their reputed or accredited beneficial results.

[1] A paper read at the International Surgical Congress at Brussels on Sept. 24th, 1908.

in the laboratory but which in nature are transmitted solely by the insect intermediaries in which they have necessarily undergone sexual changes. The malaria and yellow fever germs have been transmitted artificially many times by blood inoculation from man to man, yet no one can deny that in nature the mosquito is the appropriate transmitter of these germs. Stress has been laid on the fact that in our laboratories the same strain of trypanosomes has been passed from vertebrate to vertebrate through many hundreds of generations and that as yet there has been observed no sign of diminishing vigour or inoculability in the parasites, such as might be interpreted as indicating the approaching necessity for sexual resuscitation. So far as I know, the experiment has not been tried, but I have no doubt the malaria parasite could be similarly transmitted from man to man for many, perhaps hundreds, of generations. It is so transmitted in the same man and that without sexual reinvigoration. Nevertheless we know, unless it is again passed through a mosquito, that it dies out spontaneously in every instance and in a space of time something less than three years. Perhaps if transferred to a fresh blood it would live even longer than this, even without sexual reinvigoration, just as certain amœbæ can be kept alive asexually beyond their natural term by change of culture medium. Some trypanosome infections, including that of sleeping sickness, we know are normally longer lasting than malarial infections; it is reasonable, then, to think that they are proportionately more enduring when transmitted artificially. The argument based on inoculation experiments is, therefore, in my opinion, of little weight.

4. The fourth argument against a general law that blood protozoa requiring arthropod vectors use these vectors as a medium for sexual development is, in my opinion, the most formidable of any hitherto advanced. It is based on the mode in which the virus of the horse disease known as dourine is conveyed. Dourine is a characteristic trypanosome disease. In nature it is contracted during coitus. It can readily be conveyed to other animals, but it affects principally stallions, which convey it to, and, presumably, acquire it from, brood mares. It is conveyed and contracted naturally, therefore, in the same way as syphilis—that is to say, by contact of mucous surfaces. From this it might be inferred that a sexual stage in an insect is unnecessary for this particular trypanosome; and if unnecessary for this trypanosome unnecessary for any species of trypanosome.

Believing in the uniformity of natural operations and in the necessity for sexual reinvigoration in all animals, including the protozoa; and believing that a sexual stage occurs in the case of other trypanosomes, I believe it must occur in that of dourine—*Trypanosoma equiperdum*; and, as with other trypanosomes, that it is passed in some insect as yet unrecognised.

For reasons which I shall presently explain, I conjecture that this insect may be one which itself has acquired parasitic or semi-parasitic habits; and, consequently, seldom passing from horse to horse, is not the usual transmitter of the trypanosome from horse to horse. To compensate for this inefficiency of its sexual medium as a transmitter, the trypanosome by a kind of reversion to ancestral habit, has taken on the habit of contact transmission during its asexual stage, retaining, however, the insect for sexual reinvigoration.

This suggestion will, I daresay, appear to some, probably to most of my hearers, as being so wildly hypothetical as to be scarcely worth considering. But when we come to examine it a little carefully I think we shall find that, after all, it is not without support, or so highly improbable as at first sight it appears to be. Moreover, should it be established, it is conceivable that it might suggest an explanation for some of the many things in epidemiology that are still hard to understand.

That so many parasites require two hosts, a definitive and an intermediary, zoologically so dissimilar as vertebrate and insect or mollusc, has always appeared to me a remarkable phenomenon and one difficult to explain on Darwinian principles. And yet undoubtedly it conforms to these principles. One can readily understand how an animal, originally free, can adapt itself to parasitic life on another animal, but it is very difficult at first sight to explain how it can accustom itself to life in two absolutely different hosts—hosts so far removed from each other zoologically as a man and a mosquito; and, further, that both man and mosquito are essential for its welfare; and, moreover, that in one host—in this case the vertebrate—the parasite has an asexual life and in the other host—the insect—a sexual life. How by any recognised principle of evolution can a life so complicated be attained or explained?

I would with great diffidence and without entering on detail submit the following hypothesis. Vertebrates, arthropods, molluscs, helminths, protozoa have all of them sprung from a common ancestor, or, if not from one common ancestor, from similar ancestors. Very early in the growth of the family tree a certain originally free organism became at first intermittingly, then finally and permanently, parasitic on another organism. In time a definite host and parasite relationship was established between the two. From the original host varieties, species, genera, and so on were gradually evolved. Concurrently with this evolution in the host the parasite, just as its host had done, adapting itself to its changing environment, evolved new varieties, species, genera, &c.

In the course of these concurring evolutionary processes there came a time when, say, the insect and vertebrate strains began to diverge. A certain organism was parasitic on the common insect-vertebrate ancestor. The process of evolution in this host-ancestor being necessarily very gradual, the parasite—as is the case with many existing parasites—was capable of adapting itself to the closely related varieties of the host, among others to the insect-resulting strain and to the vertebrate-resulting strain. Divergence in these host-strains continuing, varieties became species, species genera, and so on, until insect and vertebrate, as they exist at the present day, were evolved.

In the early stages of the evolutionary process the parasite could live in either vertebrate strain or insect strain of host indifferently, but there came a time when it was often more to the advantage of the parasite to pass its sexual life in the ancestral insect strain, its asexual life in the ancestral vertebrate strain. In the process of evolution this at first more or less accidental habit—I can hardly apply the expression "optional habit" to a parasite—became fixed and has been transmitted, so that now the sexual life of the malaria parasite is passed in the mosquito, its asexual life in man.

This is my explanation of the double life, if I may so describe it, of so many and so widely separated parasites, including protozoa, nematodes, trematodes, and cestodes. I can explain it in no other way; the explanation I offer seems to harmonise the facts and to conform to the doctrines of evolution.

In the case of every double-host-using parasite it is obvious that both hosts must be organisms that are in frequent and fairly close association, otherwise the parasite employing them would lack the opportunity of passing from one to the other. Thus it comes about that the parasites of the herbivora are at another stage of their existence parasites of the carnivora; the hydatid of the sheep, the tapeworm of the dog; the trematode of the sheep, the cercaria of the swamp-haunting mollusc; the blood worms of man, the larval nematode of the mosquito. This is obvious; opportunities of passage from host to intermediary, and from intermediary to host, must be of sufficient frequency, otherwise the parasite demanding them would necessarily cease to exist.

At first sight one would think that the more intimate and frequent the association of definitive and intermediary host the better the opportunity for the parasite. Thus one would think that a louse, or an itch insect, or a *Demodex folliculorum*, being permanently in residence on its vertebrate associate, would be a more suitable intermediary for a malaria parasite than the mosquito is. But we know that it is not so, and one of the reasons for this undoubtedly is that these ectozoa comparatively rarely pass from vertebrate to vertebrate; whereas the mosquito is in the habit of biting one man one day, and it may be quite another man a few days later, and so constitutes a most efficient go-between and vector of blood parasites.

But now another principle comes into operation in this complex of parasitism. Insect and vertebrate life have been evolved side by side, springing from a common ancestor. I have endeavoured to explain in what way the parasites they possess in common have been evolved concurrently and along with them, and I have attempted an explanation of the phenomenon of definitive and intermediary host, and to show that this is no fortuitous relationship but a necessary one, and one in entire harmony with the

doctrines of evolution. I have endeavoured to explain how a certain intimacy of association between intermediary and definitive host is essential for the parasites employing them, and how this association must not be confined exclusively, as regards either host or intermediary, to a single individual of each or either.

The protozoa and possibly the nematodes acknowledge, in my opinion, a very remote ancestry—that is to say, they became parasitic very early in the growth of the phylogenetic tree. There are other parasites, however, which manifestly must have adopted the parasitic habit very much later in the history of the animal kingdom. Certain insects, which probably from the beginning were closely associated with vertebrates and lived on the juices of these vertebrates, finding that they no longer required their wings, gradually dropped these wings and permanently attached themselves to their vertebrate food source. Such are many of the hemipterous and apterous insects, lice, &c. Similarly the ancestors of the acari, of some of the ticks, and other ectozoa have gradually fallen into complete or partial parasitic habits; certain bugs and ticks are even at the present day in process of acquiring this habit. I have no doubt that, as with the modern mosquitoes, ticks, and bugs, the ancestors of the existing huge ectozoal fauna of man and other vertebrates fostered parasites which they possessed in common with their respective vertebrate associates. What, you may ask, has become of these parasites? Have they failed to do what other parasites and the hosts of other parasites have succeeded in doing; have they failed to adapt themselves to their gradually changing environment? And if they have succeeded in adapting themselves how did they manage to overcome certain obvious difficulties, for example, that which I have indicated as being so necessary to such parasites, the go-between habit of at least one of the hosts, that necessity which is so efficiently subserved in the case of the malaria parasite by the mosquito?

I believe that this has been effected by a process of reversion, the asexual form of the parasite gradually re-acquiring, for purposes of propagation, the capacity and habit of direct passage from vertebrate to vertebrate, the necessity for sexual reinvigoration from time to time being still subserved by the ectozoal descendant of an originally free insect or other arthropod.

That is how I would explain the apparent absence of an insect intermediary in the trypanosome disease, dourine. Some apterous, hemipterous, or semi-parasitic insect phylogenetically allied to the tsetse flies is its intermediary. This insect has not been found, probably because it has not been looked for in the proper way.

I hold, therefore, that the existence of a sexual phase in the sleeping sickness trypanosome, *Trypanosoma gambiense*, and other trypanosomes is more than probable, that it has not been disproved, and that the argument founded on the natural direct communicability of dourine in the apparent absence of an insect intermediary for its germ, *Trypanosoma equiperdum*, is not valid, and that the evidence hitherto adduced is distinctly in favour of a law to the effect that blood-haunting protozoa having arthropod vectors require, and make use of, these vectors for necessary sexual development. Why the sexual stage of these parasites is passed in the arthropod and not in the vertebrate I cannot explain, any more than I can explain the contrary arrangement which obtains in the blood-haunting nematodes, the sexual stage in their case being passed in the vertebrate host, the asexual in the insect.

I have no doubt, while listening to these remarks, it has occurred to some of you, as it has often occurred to me, that the principles I have endeavoured to express have a wider application than that which I have directly indicated, that our disease germs and our ectozoa—insignificant though the latter appear to be—are correlated more frequently than is generally suspected, that, in fact, there is a necessary relationship between them. Indeed, in some instances we are beginning to find this to be the case. I have no doubt some of you dimly perceive that the whole of this subject, which recent studies in tropical medicine have done so much to develop, may have important practical bearings, that it is not an exclusively tropical one, and that in the near future it may find an application in the explanation of the pathogenesis and, therefore, an application in the prevention of many diseases of temperate as well as of tropical climates. It is a tempting theme to enlarge on. I must forbear. I feel I have already been sufficiently hypothetical. Perhaps some future Huxley lecturer will atone for my sins in this respect and supply the facts which, I acknowledge, are still lacking fully to establish the several hypotheses I have endeavoured to express.

THE TREATMENT OF INOPERABLE CANCER.[1]

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WHEN the Central Committee of the International Society of Surgery honoured me in March, 1906, by asking me to read a paper at the Congress in 1908 on the treatment of inoperable cancer they were, I believe, aware that I had opened a discussion on the same subject at the meeting of the British Medical Association at Manchester in August, 1902. It is now, as I write, about five and a half years since that discussion took place, and with but little exception the question stands to-day much as it did then. Increased experience and the mere lapse of time have enabled some of the methods then under consideration to be more justly appraised, and certain others which have since then been claimed to be cancer cures have been brought forward, but there has been, unfortunately, no definite advance towards the discovery of a reliable cure. If, therefore, I borrow somewhat freely from my former paper, it is on the old Greek principle that having once said what one wished to say, one can hardly say it twice, *ὃις δὲ οὐκ ἐνδέχεται*, except by repeating one's own words.

I will begin by quoting verbatim the definition I gave in 1902 of the meaning of the terms the "treatment of inoperable cancer."

"The term 'cancer' is used in a general sense to include all forms of malignant new growths, and therefore embraces rodent ulcer, sarcoma, and lympho-sarcoma, and endothelioma as well as epithelioma and other varieties of carcinoma. The term 'inoperable' means that the disease cannot be entirely eradicated, or permanent immunity hoped for, by a cutting operation, or by the actual cautery, or any escharotic aiding the knife. It does not imply that malignant disease is of constitutional as distinct from local origin and that as such it is ineradicable. On the contrary, I take it for granted that cancer is at first, and so far as rodent cancer is concerned throughout, a local disease. But even on this view there are four groups of inoperable cases. They are: (1) primary cancer affecting inaccessible parts and organs; (2) primary cancer which though originating in an accessible part or organ of the body has been allowed to extend beyond the limits within which an operation is prudent and complete removal possible; (3) certain cases of acute diffuse carcinoma and very rapidly growing or widely infiltrating new growths of exceptionally virulent character; and (4) recurrent cancer, where the disease has recurred in multiple metastatic foci or in parts beyond the limits of removal. Many of the cases included in these groups are submitted to operation for the purpose of palliating symptoms or prolonging life. Hence the term 'treatment' as applied to inoperable cancer means one of two things: (1) the employment of remedies and methods other than the knife, to cure, ameliorate, or retard the disease, as well as to prevent relapses after its removal; or (2) the employment of the knife to give relief from pain, to prolong life, to restore function, and otherwise to make the patient's condition more tolerable."

PALLIATIVE OPERATIONS.

In a paper which is intended merely to introduce a discussion it is of course quite impossible to consider all the many palliative operations which are resorted to in cancer of the various organs and regions of the body. Only the principal methods employed to combat cancer in the organs and parts most commonly affected will be referred to and those only with regard to their reputed or accredited beneficial results.

[1] A paper read at the International Surgical Congress at Brussels on Sept. 24th, 1908.

In *cancer of the tongue* the division of the lingual gustatory nerve gives the most signal relief from the pain, often otherwise intractable, which is referred to the side of the tongue, to the ear and temple, and indeed to the whole area of the distribution of the third division of the fifth nerve. Ligation of both lingual or both external carotid arteries is followed by subsidence of œdema and diminution of profuse salivation, as well as by cessation of hæmorrhages. Sometimes the mere extraction of the teeth gives great comfort in those cases in which œdema and extensive infiltration of the tongue lead to painful indentations of the organ from pressure against them. It is sometimes not only justifiable but advisable to excise the greater part or the whole of the tongue, even though the whole of the disease cannot be thereby removed. The pain, the putrid odour, and the other most offensive features of the disease are at any rate removed by the operation. Pain often very intense is caused when cystic formations develop rapidly in cancerous glands in the triangles of the neck or beneath the sterno-mastoid muscle. In such cases much relief is quickly given by laying open the swellings and treating the cavity with chloride of zinc pledgets, acetone, a solution of trypsin, or the high-frequency current.

As an instance of the variation of opinion and of practice from time to time as to the limits of the so-called curative operations I may take *cancer of the larynx*.

Opinions have varied greatly and still differ most remarkably with reference to thyrotomy. Since Paul Bruns denounced in 1878 attempts to extirpate cancer of the larynx by means of thyrotomy, and as intralaryngeal operations have been universally abandoned since about 1881, partial and total laryngectomy have been introduced, and in Germany especially are somewhat widely practised. Cases which were formerly considered unfit for operation are now included in the so-called "operable" category. In Germany not only is the entire larynx removed in cases of extrinsic laryngeal cancers, but intrinsic laryngeal cancers, which in England are successfully dealt with by thyrotomy, are submitted to hemi-laryngectomy or total laryngectomy.

Professor Gluck of Berlin, who is a great advocate of total laryngectomy, has performed most extensive operations, including excision of parts of the tongue or parts of the œsophagus, as well as of the cervical lymphatic glands and portions of the nerves of the neck.

In England, on the other hand, Sir Felix Semon and others have given abundant proof of the success of thyrotomy and of the immunity from recurrences which is secured by it in cases of intrinsic cancer of the larynx when diagnosed early and operated upon thoroughly.

Some years ago I performed total laryngectomy on a man who after fully realising what his condition would be for the rest of his life practically committed suicide on the eighth day after the operation. Since this experience I have been strongly adverse to advising any patient to undergo the operation, nor would I again perform it on anyone without previously explaining to the patient in the fullest manner what the post-operative condition must necessarily be and getting from him an answer to the question whether under the circumstances he deemed life would be worth having.

When a patient has refused an operation for the complete removal of the growth, or when the disease and the general condition of the patient do not permit of any such being undertaken, palliative means may give relief. Much improvement often follows tracheotomy when performed in good time. Whenever difficult respiration is threatened tracheotomy should be done without delay, the trachea being opened always low down and as far from the growth as possible.

Gastrostomy is sometimes advised in cases of obstruction caused by the extension of growth on the œsophageal aspect of the cricoid cartilage. In these cases an opening into the stomach may be the only means of palliating the symptoms, because the retention of a tube can rarely be tolerated when the growth intervenes between the rigid cricoid and the resisting spinal column.

A question which might with advantage be discussed at a meeting of the International Society of Surgery is whether gastrostomy is not far too frequently performed in *carcinoma of the œsophagus?* The use of a tube, short or long, should, I venture to think, be more often resorted to than it is. By its means obstruction would be avoided in many cases. Nor are the results of the operation of gastrostomy for œsophageal cancer very satisfactory. This is doubtless in large part due to the late stage in the disease at which the patients will consent to the operation.

One surgeon admits to having done the operation "too late" in half the cases he operated upon. With a 50 per cent. operative mortality all the other patients were believed to have died within six months from the date of the operation. Another surgeon lost one-fifth of his cases from the operation itself; three-fifths died at periods after the operation varying from six weeks to seven months; and of the remaining fifth, all that was known of them was that two out of three were alive at periods of from six weeks to five months after the operation.

That some few patients have been able to swallow semi-solid food, such as custard or bread soaked in milk, for a short time, perhaps even for a few weeks after gastrostomy, cannot with confidence be put down to the credit of the operation. The same thing sometimes occurs independently of gastrostomy. Seelig records a case[2] in which gastrostomy was performed a day or two *after* the ability to swallow had returned, but death took place, nevertheless, eight weeks later after complete inability to swallow had again set in.

In most cases the improvement is of very brief duration. The very cases in which the cessation of efforts at swallowing is most requisite—namely, those in which the separation between the œsophagus and the air passages is very thin—are the most unfavourable for gastrostomy, as these patients invariably die very soon after the operation from perforation into the air passages.

If the prolongation of life for a short period is a matter of moment to the patient, on account of family circumstances, for example, the operation may be desirable in certain cases, but it cannot often be a real advantage to the patient himself.

Concerning gastro-enterostomy for *malignant disease of the stomach*, I am still of opinion that it is very doubtful if sufficient benefit is derived from gastro-jejunostomy or other short-circuiting operations to make it worth while undergoing them. For conditions other than cancer gastro-jejunostomy is undoubtedly often of the highest value, but when undertaken for cancerous affections, even if the patient survives the operation, the prolongation of life is very limited, the ultimate sufferings are in most cases very severe, and the substitute function of the parts concerned is too often unsatisfactory.

Though this view of gastro-jejunostomy for malignant disease of the stomach is not at the present time any more than in 1902 the one generally accepted, there must be many besides myself who, having watched the post-operative phases of these patients, have come to the same conclusion. In many cases I have known, though great relief has for a time been afforded by the operation, still the respite has not seemed to compensate for the subsequent disappointment and misery which preceded death. It has been my lot to watch week after week up to the end patients who have undergone gastro-jejunostomy. Some of them had been regarded for a time as great surgical triumphs. But I have seen these same patients after a brief period of improvement distressed by frequent vomiting, by inability to take food, and by considerable and widespread abdominal pain. And as I watched them in their sad and pitiable plight the question often forced itself upon me whether the postponement of death compensated the patient for the miseries of living or the friends of the patient for the false hopes with which they were buoyed up during the temporary improvement of the invalid.

The immediate mortality from the operation is by no means small. It is probably not far short of from 40 to 45 per cent. If the results in all the cases by all the operators were known, possibly it would be even higher, notwithstanding the small proportion of deaths directly due to the operation itself in the practice of a few specially skilled and experienced operators. It is not, I think, an inhuman thing to say that this high mortality is the least regrettable circumstance connected with the operation.

The morbid changes due to the altered function of the parts after the operation are far from insignificant. Admitting the improvements in operative technique, and the infrequency of certain complications such as obstruction and regurgitation since the very general adoption of the posterior gastro-jejunal junction, there are other troubles arising out of the operation. Severe diarrhœa is often due to the premature

[2] G. Seelig: Annals of Surgery, December, 1907. p. 809.

emptying of the stomach of its acid products and to the failure of the neutralisation of these products by the bile and pancreatic juice. This failure is caused by the absence from the duodenum of the hydrochloric acid which stimulates both the bile and the pancreatic juice to flow.

Rydygier has recently pointed out some of the drawbacks of gastro-jejunostomy.[3] M. M. Portis of Chicago,[4] in protesting against the "appalling increase in the number of gastro-enterostomies in the past few years," refers to the numerous recorded cases of ulcer of the jejunum following gastro-enterostomy and to the persistence of symptoms and sometimes the fatal termination which are consequences of the operation.

Other complications which gastro-enterostomy does not prevent, even if it does not assist in promoting, are the breaking down of the growth, hæmorrhages from the growth or from a recently formed jejunal ulcer, toxæmia or intoxication from fermentation products, and post-operative pulmonary infarcts and septic pulmonary complications which are far from uncommon in gastric cases.

Gastro-jejunostomy ought not to be proposed when cachexia and emaciation are very pronounced, when patients are seen very late, or when the growth does not cause obstruction of the pylorus or stasis of the contents of the stomach.

Mikulicz gives 9 per cent. as the operative mortality of simple laparotomy in the late stages of the disease. If cancer of the stomach was diagnosed early and operated upon as soon as recognised then pylorectomy and partial gastrectomy might entirely do away with gastro-enterostomy for carcinoma. The immediate mortality of partial gastrectomy in suitable and early cases is not greater than that of gastro-jejunostomy, whilst the comfort and relief from it are more permanent, and the prolongation of life, even if recurrence takes place, is stated by Jacobson[5] to be longer by one year.

Willis G. Macdonald of Albany[6] collected 43 cases of pylorectomy for carcinoma of the stomach in which the patients were living without recurrence three years after the operation; and there were patients in this group who were alive ten years after the primary operation without symptoms of recurrence.

In *rectal cancer* the proportion of cases which from their commencement are either unsuitable for excision, or have become so when the patient is seen for the first time by a surgeon, may be estimated from the figures given in the fifth edition of Harrison Cripps's book on "Cancer of the Rectum" just published. Of 380 cases in his own practice 283 were deemed suitable for operation and 97 unsuitable. Of 228 cases actually operated upon 85 were treated by excision and 143 by colotomy. 55 patients refused operation. Thus somewhat more than 74 per cent. of patients with cancer of the rectum either do not seek a surgeon's advice before it is too late or else have the disease in such a position as not to allow of any chance of cure by operation. Of the 85 cases of excision the disease recurred in 33, and in 15 of these 33 colotomy was subsequently performed.

Colotomy, besides entirely obviating the risk of death from intestinal obstruction, affords relief from many of the usual symptoms of rectal cancer and retards the rate of increase of the growth. Compared with the majority of cases in which the disease is left to take its natural course those persons on whom colotomy has been performed as a rule live longer and have a less uncomfortable existence. Cripps was able to follow up the histories of 97 of the patients upon whom he had performed colotomy and found that 62 lived from 12 months to three years, 14 others lived upwards of three years, and one of the 14 survived for eight years and three months.

The prospects from colotomy are much better when the operation is done before complete obstruction sets in. The mortality of the operation in 123 cases in which the operation was performed before obstruction occurred was only 4·6 per cent., whereas it was 55 per cent. in 20 cases done after obstruction had commenced. Happily, of late years colotomy has been resorted to at a much earlier stage than was the practice formerly.

From a glance at the tables of colotomy operations for cancer which were presented at the International Medical Congress at Copenhagen in 1884 by Mr. Thomas Bryant, Professor C. Studsgard, and myself[7] it will be seen how large a proportion of the colotomies up to that time were done only after the occurrence of complete obstruction. Twenty-four years ago colotomy was not firmly established or generally accepted, even in England, as an operation to be recommended and was, I believe, very rarely if at all practised in Germany and France. But subsequent experience of its efficacy as a palliative operation, together with the diminished and diminishing dread of surgical operations generally, have led the profession to recommend, and patients to submit to, colotomy at a much earlier stage instead of postponing it until days, and often many days, after complete obstruction had set in.

As substitute operations for colotomy when the disease is close to the anus linear proctotomy and erasion of the growth have sometimes proved to be temporarily beneficial. The median rectotomy as practised by the late M. Verneuil of Paris, and the lateral rectotomy followed by the use of Paquelin's cautery as recommended by the late Mr. John Marshall of London are now rarely if ever employed. In cases in which simple palliative means alone are permitted or available much benefit is often derived from the regulated injection of an antiseptic solution through a large-sized catheter or a small-sized tube passed along the bowel and beyond the growth.

The line of demarcation between operable and inoperable *cancers of the uterus* has recently undergone a change. Writing in 1902 I referred to the great improvements in the technique of vaginal hysterectomy, to the diminished death-rate of the operation, and to the freedom of the patients who had been submitted to it from dysmenorrhœa, hæmatometra, hæmatosalpinx and the other sequelæ of supravaginal amputation of the cervix. But having said this much I went on to remark: "No radical operation, however, is worth performing when the disease extends beyond the limits of the uterus into the connective tissue about the cervix, or into the utero-sacral or broad ligaments, or when the vagina is extensively involved. In such cases prolonged immunity, to say nothing of permanent benefit from an operation, is out of the question." To-day, Wertheim's method of operating has become better known and has in consequence brought many cases into the operable list which previously had been considered to be inoperable. The Vienna professor's operation has also by some gynæcologists been employed in cases which others consider well suitable for vaginal hysterectomy. By Wertheim's operation extensions of disease into the broad and the utero-sacral ligaments, affected glands lying in the fork between the external and internal iliac arteries, nodules of new growth outlying an inch or more from the cervix uteri, as well as disease in the upper part of the vagina, can be removed. The operation is unquestionably a very difficult and severe one, but Dr. Arthur Lewers[8] of the London Hospital, who has been employing it since 1905 in cases too advanced for vaginal hysterectomy, thinks well of the results he has obtained by it.

In cases of fungating carcinoma of the uterus and also of the anus and rectum the use of the curette followed by the application of zinc chloride either by means of pledgets of cotton wool soaked in a strong solution or by applying the solid salt itself to the margins and raw surfaces of the diseased area, which I frequently employed in my wards in the Middlesex Hospital, has met with increasing favour. Otto von Herff[9] is strongly in favour of its use in uterine carcinoma but is opposed to its application in endometritis. Gellhorn[10] follows up curetting with the application of acetone. Formalin he finds too painful when concentrated and without action when diluted. Curetting and the extensive use of the thermo-cautery or of concentrated carbolic acid[11] also give very good results. But with each of these methods the effects are only temporary and the procedure needs to be repeated at varying intervals.

In certain cases of *mammary carcinoma* the breast should be removed for palliative purposes even when there are present affected and irremovable glands and widespread

[3] Von Rydygier: Annals of Surgery, November, 1906, p. 781.
[4] M. Portis: Idem, December, 1906, p. 901.
[5] Jacobson: The Operations of Surgery, fifth edition, 1907, vol. ii.
[6] W. G. Macdonald of Albany: Annals of Surgery, February, 1901.
[7] Vide Report of the Surgical Section of the International Medical Congress, 1884.
[8] A. H. N. Lewers: THE LANCET, March 7th, 1908, p. 704.
[9] O. von Herff: Münchener Medicinische Wochenschrift, Feb. 18th, 1908.
[10] Gellhorn: Idem, No. 51, Dec. 17th, 1907.
[11] Weindler: Zentralblatt für Gynäkologie, No. 22, 1907.

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If the prolongation of life for a short period is a matter of moment to the patient, on account of family circumstances, for example, the operation may be desirable in certain cases, but it cannot often be a real advantage to the patient himself.

Concerning gastro-enterostomy for *malignant disease of the stomach*, I am still of opinion that it is very doubtful if sufficient benefit is derived from gastro-jejunostomy or other short-circuiting operations to make it worth while undergoing them. For conditions other than cancer gastro-jejunostomy is undoubtedly often of the highest value, but when undertaken for cancerous affections, even if the patient survives the operation, the prolongation of life is very limited, the ultimate sufferings are in most cases very severe, and the substitute function of the parts concerned is too often unsatisfactory.

Though this view of gastro-jejunostomy for malignant disease of the stomach is not at the present time any more than in 1902 the one generally accepted, there must be many besides myself who, having watched the post-operative phases of these patients, have come to the same conclusion. In many cases I have known, though great relief has for a time been afforded by the operation, still the respite has not seemed to compensate for the subsequent disappointment and misery which preceded death. It has been my lot to watch week after week up to the end patients who have undergone gastro-jejunostomy. Some of them had been regarded for a time as great surgical triumphs. But I have seen these same patients after a brief period of improvement distressed by frequent vomiting, by inability to take food, and by considerable and widespread abdominal pain. And as I watched them in their sad and pitiable plight the question often forced itself upon me whether the postponement of death compensated the patient for the miseries of living or the friends of the patient for the false hopes with which they were buoyed up during the temporary improvement of the invalid.

The immediate mortality from the operation is by no means small. It is probably not far short of from 40 to 45 per cent. If the results in all the cases by all the operators were known, possibly it would be even higher, notwithstanding the small proportion of deaths directly due to the operation itself in the practice of a few specially skilled and experienced operators. It is not, I think, an inhuman thing to say that this high mortality is the least regrettable circumstance connected with the operation.

The morbid changes due to the altered function of the parts after the operation are far from insignificant. Admitting the improvements in operative technique, and the infrequency of certain complications such as obstruction and regurgitation since the very general adoption of the posterior gastro-jejunal junction, there are other troubles arising out of the operation. Severe diarrhœa is often due to the premature

[2] G. Seelig: Annals of Surgery, December, 1907. p. 809.

emptying of the stomach of its acid products and to the failure of the neutralisation of these products by the bile and pancreatic juice. This failure is caused by the absence from the duodenum of the hydrochloric acid which stimulates both the bile and the pancreatic juice to flow.

Rydygier has recently pointed out some of the drawbacks of gastro-jejunostomy.[3] M. M. Portis of Chicago,[4] in protesting against the "appalling increase in the number of gastro-enterostomies in the past few years," refers to the numerous recorded cases of ulcer of the jejunum following gastro-enterostomy and to the persistence of symptoms and sometimes the fatal termination which are consequences of the operation.

Other complications which gastro-enterostomy does not prevent, even if it does not assist in promoting, are the breaking down of the growth, hæmorrhages from the growth or from a recently formed jejunal ulcer, toxæmia or intoxication from fermentation products, and post-operative pulmonary infarcts and septic pulmonary complications which are far from uncommon in gastric cases.

Gastro-jejunostomy ought not to be proposed when cachexia and emaciation are very pronounced, when patients are seen very late, or when the growth does not cause obstruction of the pylorus or stasis of the contents of the stomach.

Mikulicz gives 9 per cent. as the operative mortality of simple laparotomy in the late stages of the disease. If cancer of the stomach was diagnosed early and operated upon as soon as recognised then pylorectomy and partial gastrectomy might entirely do away with gastro-enterostomy for carcinoma. The immediate mortality of partial gastrectomy in suitable and early cases is not greater than that of gastro-jejunostomy, whilst the comfort and relief from it are more permanent, and the prolongation of life, even if recurrence takes place, is stated by Jacobson[5] to be longer by one year.

Willis G. Macdonald of Albany[6] collected 43 cases of pylorectomy for carcinoma of the stomach in which the patients were living without recurrence three years after the operation; and there were patients in this group who were alive ten years after the primary operation without symptoms of recurrence.

In *rectal cancer* the proportion of cases which from their commencement are either unsuitable for excision, or have become so when the patient is seen for the first time by a surgeon, may be estimated from the figures given in the fifth edition of Harrison Cripps's book on "Cancer of the Rectum" just published. Of 380 cases in his own practice 283 were deemed suitable for operation and 97 unsuitable. Of 228 cases actually operated upon 85 were treated by excision and 143 by colotomy. 55 patients refused operation. Thus somewhat more than 74 per cent. of patients with cancer of the rectum either do not seek a surgeon's advice before it is too late or else have the disease in such a position as not to allow of any chance of cure by operation. Of the 85 cases of excision the disease recurred in 33, and in 15 of these 33 colotomy was subsequently performed.

Colotomy, besides entirely obviating the risk of death from intestinal obstruction, affords relief from many of the usual symptoms of rectal cancer and retards the rate of increase of the growth. Compared with the majority of cases in which the disease is left to take its natural course those persons on whom colotomy has been performed as a rule live longer and have a less uncomfortable existence. Cripps was able to follow up the histories of 97 of the patients upon whom he had performed colotomy and found that 62 lived from 12 months to three years, 14 others lived upwards of three years, and one of the 14 survived for eight years and three months.

The prospects from colotomy are much better when the operation is done before complete obstruction sets in. The mortality of the operation in 123 cases in which the operation was performed before obstruction occurred was only 4·6 per cent., whereas it was 55 per cent. in 20 cases done after obstruction had commenced. Happily, of late years colotomy has been resorted to at a much earlier stage than was the practice formerly.

From a glance at the tables of colotomy operations for cancer which were presented at the International Medical Congress at Copenhagen in 1884 by Mr. Thomas Bryant, Professor C. Studsgard, and myself[7] it will be seen how large a proportion of the colotomies up to that time were done only after the occurrence of complete obstruction. Twenty-four years ago colotomy was not firmly established or generally accepted, even in England, as an operation to be recommended and was, I believe, very rarely if at all practised in Germany and France. But subsequent experience of its efficacy as a palliative operation, together with the diminished and diminishing dread of surgical operations generally, have led the profession to recommend, and patients to submit to, colotomy at a much earlier stage instead of postponing it until days, and often many days, after complete obstruction had set in.

As substitute operations for colotomy when the disease is close to the anus linear proctotomy and erasion of the growth have sometimes proved to be temporarily beneficial. The median rectotomy as practised by the late M. Verneuil of Paris, and the lateral rectotomy followed by the use of Paquelin's cautery as recommended by the late Mr. John Marshall of London are now rarely if ever employed. In cases in which simple palliative means alone are permitted or available much benefit is often derived from the regulated injection of an antiseptic solution through a large-sized catheter or a small-sized tube passed along the bowel and beyond the growth.

The line of demarcation between operable and inoperable *cancers of the uterus* has recently undergone a change. Writing in 1902 I referred to the great improvements in the technique of vaginal hysterectomy, to the diminished death-rate of the operation, and to the freedom of the patients who had been submitted to it from dysmenorrhœa, hæmatometra, hæmatosalpinx and the other sequelæ of supravaginal amputation of the cervix. But having said this much I went on to remark: "No radical operation, however, is worth performing when the disease extends beyond the limits of the uterus into the connective tissue about the cervix, or into the utero-sacral or broad ligaments, or when the vagina is extensively involved. In such cases prolonged immunity, to say nothing of permanent benefit from an operation, is out of the question." To-day, Wertheim's method of operating has become better known and has in consequence brought many cases into the operable list which previously had been considered to be inoperable. The Vienna professor's operation has also by some gynæcologists been employed in cases which others consider well suitable for vaginal hysterectomy. By Wertheim's operation extensions of disease into the broad and the utero-sacral ligaments, affected glands lying in the fork between the external and internal iliac arteries, nodules of new growth outlying an inch or more from the cervix uteri, as well as disease in the upper part of the vagina, can be removed. The operation is unquestionably a very difficult and severe one, but Dr. Arthur Lewers[8] of the London Hospital, who has been employing it since 1905 in cases too advanced for vaginal hysterectomy, thinks well of the results he has obtained by it.

In cases of fungating carcinoma of the uterus and also of the anus and rectum the use of the curette followed by the application of zinc chloride either by means of pledgets of cotton wool soaked in a strong solution or by applying the solid salt itself to the margins and raw surfaces of the diseased area, which I frequently employed in my wards in the Middlesex Hospital, has met with increasing favour. Otto von Herff[9] is strongly in favour of its use in uterine carcinoma but is opposed to its application in endometritis. Gellhorn[10] follows up curetting with the application of acetone. Formalin he finds too painful when concentrated and without action when diluted. Curetting and the extensive use of the thermo-cautery or of concentrated carbolic acid[11] also give very good results. But with each of these methods the effects are only temporary and the procedure needs to be repeated at varying intervals.

In certain cases of *mammary carcinoma* the breast should be removed for palliative purposes even when there are present affected and irremovable glands and widespread

[3] Von Rydygier: Annals of Surgery, November, 1906, p. 781.
[4] M. Portis: Idem, December, 1906, p. 901.
[5] Jacobson: The Operations of Surgery, fifth edition, 1907, vol. ii.
[6] W. G. Macdonald of Albany: Annals of Surgery, February, 1901.

[7] Vide Report of the Surgical Section of the International Medical Congress, 1884.
[8] A. H. N. Lewers: THE LANCET, March 7th, 1908, p. 704.
[9] O. von Herff: Münchener Medicinische Wochenschrift, Feb. 18th, 1908.
[10] Gellhorn: Idem, No. 51, Dec. 17th, 1907.
[11] Weindler: Zentralblatt für Gynäkologie, No. 22, 1907.

metastases. If the mammary gland involved is very large and pendulous, if discharges are profuse or very offensive, or if great pain is localised in the mamma itself then excision is indicated.

In fungating, bleeding, or foully-discharging growths, curetting, followed by the application of the caustics already mentioned in connexion with the palliative treatment of uterine cancer, is often of much benefit. Fell's paste was at one time much used in the Middlesex Hospital, and in my own practice as also in that of some of my colleagues was found to be of great value in such cases.

For the treatment of certain very extreme cases of paralysing œdema and pain of the upper limb I may here refer to what I wrote in 1902 as to the relief afforded by the interscapulo-thoracic amputation of Berger, or amputation through the shoulder-joint, or amputation just below the humeral tuberosities. In two cases in my hospital practice amputation at the shoulder gave very considerable relief. Mr. C. T. Dent of St. George's Hospital performed Berger's operation on account of a recurrent cancerous ulcer in the axilla attended with severe pain and swelling of the limb, and he gives the particulars of three other cases of recurrent carcinoma in which this amputation was done.[12] As Mr. Dent discreetly remarks, "Unless pain were severe, indeed the predominant symptom, the operation would hardly be taken into serious consideration." In the cases in which it has been resorted to great comfort has been derived therefrom.

A very ingenious operation, the definite outcome of work in the cancer research laboratories of the Middlesex Hospital, has quite lately been performed by Mr. W. Sampson Handley for this very disabling complication of breast cancer. The operation, for which Mr. Handley proposes the name of "lymphangioplasty," consists in introducing into the subcutaneous tissue of the swollen arm a number of silk threads running longitudinally upwards from the wrist to terminate in the loose and healthy areolar tissue in or beyond the axilla, and spaced out at convenient intervals around the limb. The treatment is of the nature of drainage by capillary attraction and has been attended by most marked success.[13]

Division of the brachial plexus has been recommended in cases in which there is great pain owing to the brachial nerve trunks being involved but in which the conditions which call for amputation are not present; so also has division or excision of the posteribr roots of the spinal nerves in cases of secondary carcinoma of the spinal column. Carcinoma of the vertebræ is always secondary, and almost invariably so to mammary cancer. Sarcoma of the vertebræ is generally secondary, but is sometimes due to direct extension from the overlying structures. When the pain caused by these growths is extreme, the operation of laminectomy, opening of the dura mater, and division or excision of the posterior nerve roots has given great relief.[14]

There is one terrible condition in breast cancer which no operative treatment can relieve, that is cancer *en cuirasse*. I have had several such cases under my care, in some of which nearly the whole of the skin of the chest, abdomen, neck, and shoulders has been involved. The short and difficult breathing, the sensation of continuing suffocation, the pain, and the feeling as if being compressed within a rigid casing form a condition of bodily torture and mental anguish as distressing to witness as anything I have seen. More than one of these patients have expressed themselves to me in almost identically the same words—namely, that they would like to take a large knife and rip themselves open through the chest. The only means I have found of giving relief in these shocking cases has been the administration of liberal doses of spirit of sulphuric ether combined with opium or morphine.

As regards oöphorectomy for mammary cancer, Sir George Beatson has kindly written to me fully as to his present views. These are essentially the same as he held in 1902, since which year he has performed oöphorectomy for mammary cancer in only five cases. He admits that there is no reliable evidence that the operation influences the course of cancer; that as yet no permanent cure has been effected by it; and that "although oöphorectomy has been narrowed down to a comparatively limited group of cases, and although even in the most successful of these no results of a permanent nature have been maintained, yet in view of the very small mortality of the operation *per se* it is a procedure that can be fairly put before the patient as having possible palliative effects that may carry with them improved health and prolonged life."

Of cancer of the *urinary bladder* my later experience tends to confirm the views I expressed in 1902, namely, that excision of the diseased and surrounding parts of the bladder should be the treatment for the cases in which the anterior or upper portion of the organ is affected; and that suprapubic drainage should be employed in other cases where great pain and frequent and painful micturition are present. Dr. Hugh Cabot[15] of Boston recommends curetting and cauterising the growths and temporarily draining through a suprapubic cystotomy opening.

In taking a survey of the treatment of inoperable cancer it is impossible to escape from a feeling of professional remorse at the imperfections in diagnosis and the hesitation and delay in the treatment of precancerous and early cancerous conditions. Whether we think of mammary, of laryngeal, of gastric or rectal cancers, of cancerous disease of the tongue, intestine, or uterus, the conviction is forced upon one that many who are attacked by cancer would have their lives spared altogether and many others would have their lives prolonged and their deaths rendered less painful and sad did the profession at large recognise sooner the threatenings and the early existence of cancer and urge their patients to undergo operation at the earliest possible moment. We have striking object-lessons in cancer of the gall-bladder and of the penis. It is the exception for cancer of the gall-bladder to occur apart from the irritation excited by the presence of gall-stones; it is the exception for epithelioma of the penis to arise apart from the common exciting cause—phimosis. It is estimated that 88 per cent. is the frequency with which primary cancer of the gall-bladder is associated with gall-stones (Courvoisier) and 85 per cent. the frequency with which epithelioma of the penis is associated with phimosis (J. D. Barney). If, then, it was the rule to urge early operation for gall-stones and if circumcision was strongly advised in all cases when the prepuce cannot be easily and completely retracted, but especially when phimosis is present in men past middle life, there can be no doubt that the frequency of cancer in these organs would be diminished. It is almost certain that cholecystotomy has saved many gall-bladders on the verge of becoming cancerous from actually passing into cancer. The rarity of carcinoma following the operation for gall-stones, even though there is gross thickening of the walls of the gall-bladder at the time of the operation, gives countenance to this opinion. On the other hand, the mortality of operations for cancer of the gall-bladder once the disease is established is very high, ranging from 23 to 57 per cent., according to the degree of anæmia, jaundice, and complications from adhesions.

Another typical illustration of a precancerous condition is leucoplakia of the tongue, buccal mucous membrane, and vulva. Although this condition is far from being invariably followed by epithelioma even after existing for many years, it ought to command frequent and careful supervision, and resort should be had to operation at the earliest sign of its transition into cancer. In a paper based on 75 cases of epithelioma and leucoplakia of the tongue which I communicated to the Medical Society of London in 1882,[16] there were 13 cases of leucoplakia associated with cancer, and 14 cases in which the condition had been in existence for periods ranging from eight to 30 years without cancer supervening. This history, together with the fact that the leucoplakic state sometimes returns immediately upon the cicatricial surface, would forbid excision in most of these cases as a precautionary means against cancer, but it should not hinder us from operating on the earliest indication of excoriation or ulceration.

With symptoms of gastric disease continuing unrelieved by medicinal or dietetic treatment, an early exploratory laparotomy will result in the detection in good time of cancer of the stomach and will thus lead to its early removal by

[12] Dent: Transactions of the Royal Medical and Chirurgical Society, 1898, vol. lxxxi., p. 221.
[13] W. Sampson Handley: THE LANCET, March 14th, 1908, p. 783.
[14] Armour: Hunterian Lectures Royal College of Surgeons, England, 1908.
[15] H. Cabot: American Journal of Urology, Sept., 1907.
[16] Transactions of the Medical Society of London, vol. vi.

pylorectomy, whereas now too many of these patients drift on and are subjected at a late stage to the miseries preceding and following gastro-jejunostomy. So also in cancer of the larynx if the diagnosis were made early many patients would be cured by thyrotomy who are now submitted to the mutilating effects of total laryngectomy.

One of the greatest boons to be expected from the early recognition and early, and thereby curative, operative treatment of malignant disease would be the diminution in number and severity of the palliative operations now performed. In the course of my remarks I have already raised the doubt whether life after some of these operations is worth having.

The question of the expediency of performing operations when the duration of the comfort and improvement they afford is only a few weeks or a few months, may be considered an open one. But for my own part I entirely agree with Sir Felix Semon that "it is one thing to perform a brilliant operation, and thereby to prolong a patient's life, it is another to see him a few months afterwards dragging on a most pitiful existence." There ought to be a chance, even if remote, of the patient operated upon remaining free from the disease, or at any rate from the pain and other worst symptoms of the disease, if he submits to a serious operation, instead of a prospect of certain death within a few months under great suffering. In operations purely palliative in aim, such as gastro-jejunostomy, for example, this chance is not given. There is not the remotest hope or prospect of non-recurrence, because the disease is not removed; whilst certain death with great suffering, even though it may not come till after a spell of some few months of comparative health and comfort, stares the patient in the face throughout. Probably each of us has known instances, however, in which circumstances connected with the patient and his family have made it desirable, if not well-nigh imperative, to prolong life to its utmost limits—circumstances which have made the martyrdom of living worthy of the heroism which can face such an existence. This apart, the value of a palliative operation must be measured by its efficacy in securing ease and comfort to a patient whilst he is awaiting his end. I am disposed to think that some who speak so enthusiastically in favour of those operations for advanced cancer, of the stomach for instance, can hardly have been witnesses of the last stages of the patients who have undergone them. Nor is it warrantable to assume that because an abdominal tumour has entirely disappeared after the performance of a gastro-jejunostomy its doing so was an effect of the operation. Other cases are on record of cancerous tumours disappearing after cœliotomy, and a surgeon writing on epithelioma of the penis mentions a case in which the disease entirely disappeared in a man "who refusing operation eloped." In other cases in which no operation has been done tumours have vanished spontaneously. If we are to give credit to the gastro-jejunostomy in the one case how can we withhold it from the cœliotomy in the other, or from "elopement" in the third case; and are we to quote Proverbs xx. 3 with regard to spontaneously vanishing tumours and attribute their disappearance to not "meddling"?

OTHER METHODS OF TREATMENT.

I pass over the treatment by Finsen light, the Röntgen rays, and by radium, which are to form the subject of a separate discussion at this meeting. Neither shall I on this occasion refer to such local applications as strong liquid ammonia, cancroin, calcium carbide, methylene-blue, formalin, nosophen, corrosive sublimate; nor to the injection of cinnamate of sodium, of alcohol, acetic acid, gelatine, snake poison, turpentine; nor to the freezing process by means of carbonic acid described by Professor Homitz. Nor shall I stop to speak of the entirely negative results obtained after fair trials from alder leaves, violet leaves, marigold ointment, or molasses.

I have nothing new to say about thyroid feeding or Dr. J. H. Webb's treatment by injections of soap. Sir George Beatson's opinion of thyroid extract in cases of carcinoma generally is still favourable, provided it is given in small doses and is carefully watched. He administers it after ordinary operations for removal of carcinoma, continuing its use for long periods and he thinks with advantage.

The treatment by inoculation with a vaccine prepared from the micrococcus neoformans of Doyen, though claimed by some to have been successful in certain cases, has been generally disappointing. Doyen's serum treatment is now, I believe almost universally, deemed to be of no value. Neither the vaccine nor the serum treatment with Otto Schmidt's cancer parasite, nor Wlaeff's serum obtained by inoculating asses with yeast parasites derived from carcinoma, has been found useful.

Schmidt's treatment by means of the injection of the sterilised "killed culture" was tried upon several cases in the cancer wards of the Middlesex Hospital in 1903–04 without any benefit whatever following.

The treatment by electric currents of high voltage and high frequency which in 1902 Dr. James Allan and others thought would prove to be of important therapeutic value in inoperable cancer has been of late actively advocated by Keating Hart. The treatment was tried in the cancer wards of the Middlesex Hospital by a brush discharge both with and without sparking, and was found to have a decided local influence upon an ulcerated surface whether simple or malignant. The ulcer shows a decided tendency to diminish, fungating areas sometimes break down, discharges decrease and become thin and less offensive. The patients are benefited in a general way and show increased tone and nutrition. But no successes attended by the disappearance of the growths such as were obtained by Dr. Allan could be recorded, and the treatment after fair trial in the cancer wing of the hospital was abandoned.

Keating Hart's method consists in removing with the knife the cancer tissue acted upon by exposure for from 5, 10, to over 40 minutes to the strongest possible "lightning spark pencil" at the distance of two to four centimetres and with frequent changing of the area exposed. After the cancerous tissue has been extirpated the wound surface is again exposed to "fulguration." The patient is anæsthetised all the time as the treatment is so painful. Czerny[17] has recently reported on Keating Hart's method after trial in 35 cases, only three of which were "inoperable," two being small epitheliomata on the inside of the cheek and the third a small rodent on the nose. These three cases were essentially cured by an exposure of 10 to 15 minutes' "fulguration," followed by scraping. They could all three have been cured by other methods, but not, adds Czerny, with so little inconvenience or disfigurement. The other cases were all "inoperable" and no cure was obtained. Pain associated with septic degeneration in growths is relieved, but the growth and sepsis return. Hæmorrhage can certainly be controlled by the method. Czerny considers his experience is of too brief duration to permit him to confirm the magnificent cures in inoperable cancer reported by Keating Hart, or to doubt them.

In the treatment of sarcoma I have continued to use the mixed toxins of the streptococcus of erysipelas and the bacillus prodigiosus—Coley's fluid; but I have no definite beneficial results to report. In some instances I have thought there has been improvement, as shown by delayed growth, lessened pain, and diminished tension, but in no case cure. I am at the present time using the standardised preparation proposed by Dr. Martha Tracy[18] on a case of recurrent sarcoma of the upper jaw. There have been relief from pain and some subsidence in the size of the growth, but what the ultimate result will be I cannot say.[19]

TRYPSIN TREATMENT.

The bacteriological study of malignant new growths having been barren of positive etiological or therapeutical results of general application, it was natural that other lines of research should be followed. With a return to the search for the explanation of cancer within the body itself, attention became directed to the weapons with which the body defends itself against obnoxious elements, or which are employed by parts of the body when they require to live and grow, or with which to satisfy less urgent needs at the expense of other parts of the organism as a whole. According to prevailing conceptions these weapons are the ferments and their allies the "hormones" of Starling.

The important part played by intracellular digestion (phagocytosis) in the defence of the body has received

[17] Czerny: Münchener Medicinische Wochenschrift, No. 6, 1908.
[18] M. Tracy: Medical Record, July 27th, 1907.
[19] After a brief period of slight relief from pain and from a feeling of great fulness and tension, the disease rapidly increased and death from coma followed within five weeks of the commencement of the treatment.

general recognition. During the bacteriological era in the investigation of cancer, the part ferments play in many complex processes outside of the intestinal canal itself has become more fully recognised. Regarding the intestinal digestive ferments themselves, revolutionary discoveries have been made as the result of investigations by Pawlow, Starling and Bayliss, and others. The study of immunity to the toxins of disease under Ehrlich's leadership directed attention to the fact that the serum of the blood normally possesses a power to neutralise the activity of most and probably of all of the intestinal digestive ferments. French investigators on Metchnikoff's initiative have studied not only the power of leucocytes to digest bacteria, but have shown also that they can digest albumins and that the latter process is effected by a ferment indistinguishable from trypsin. It is certainly remarkable that the white cells of the blood possess the power of tryptic digestion yet circulate in a serum which possesses antitryptic along with its other antifermentative powers.

With so much evidence existing of the part played by ferments in the activity and counter-activity of the cells and fluids of the body, both in the building up and breaking down of tissue, it was natural that the investigation of fermentative action should be extended to the study of the growth of malignant tumours, not only with a view to explain their destructive action on healthy tissues even so difficult to attack as cartilage and bone, but also in the hope of neutralising their pernicious effects. It appeared reasonable that healthy tissues might be protected from the digestive powers of the cancer cell. There was even hope of attacking the cancer cell itself if it were found so to differ in its chemical constitution as to be more vulnerable to the actions of intestinal and other ferments than the other tissues of the body.

The occurrence of specific ferments in cancer has been described (Petri and others), but the first step in the practical application of digestive ferments to the treatment of cancer was made by F. Blumenthal, who adduced evidence that cancerous tissue seemed to be digested by pancreatin more readily than normal tissue. His observations acquired a further significance by other investigations which appeared to show that cancerous tissue was of a chemical constitution different from normal tissue. Blumenthal does not appear actually to have employed trypsin for the treatment of cancer as a result of his experiments *in vitro*. Its therapeutical application was advocated in the first place by Shaw-Mackenzie on the clinical ground that cancer was relatively infrequent in the duodenum, and on the further ground that he had observed the frequent occurrence of diabetes and cancer in different members of the same family. About the same time also it was employed by J. Beard who has formed ideas on the relation of the activity of the pancreas to the development of cancer and asserts that trypsin has a specific action on cancerous as opposed to the normal tissues of the body.

The attention thus directed to trypsin and the contradictory statements of the results which have followed its use, and perhaps also the hurry to find out if there might not be some ferment the employment of which could be heralded as the long-sought panacea free from the difficulties at once met with in the use of trypsin, have led to numerous attempts to apply other ferments. Thus the following have been tried: amylopsin, in addition to trypsin, suggested on embryological grounds (Beard), liver ferment (von Leyden and Bergell), placental tryptic ferment (Bumm, Liepmann), papayotin (Branch, Lucas), and lastly erepsin—which is contained chiefly in the intestinal mucous membrane (Cohnheim) but is common to all organs and tissues (Vernon)—has been recommended and is being experimented with by Shaw-Mackenzie.

Only in regard to the use of trypsin has sufficient time elapsed for any number of cases to be reported, and since it can scarcely have been extensively applied for more than two years, the intervals since treatment was commenced hardly justify drawing definite conclusions from clinical data alone as to what the ultimate effects of its application may be. The statements which have precipitately followed one another during the past year or more have been very contradictory and some, unfortunately, too controversial for consideration here. While of some cases statements obviously too sanguine have been made, in others the treatment appears to have relieved pain and benefited the patients at least for a time, at the cost of nothing more than a slight malaise. Other observers report complete failure to relieve the patients of any of their symptoms. The treatment has been described to be painful, to be liable to induce toxæmia, even coma and death, and to produce sterile abscesses at the site of inoculation.

Dr. J. A. Shaw-Mackenzie who, as the first to apply trypsin practically, has probably the longest experience of its effects, has latterly taken up the position that the hope that trypsin would reach the site of the disease through the blood stream when injected at a distance "does not accord with the view generally admitted that the blood possesses certain antitryptic properties"; and that "the local atrophy and degeneration of a cancerous growth induced by subcutaneous injections of trypsin in the neighbourhood of a tumour or into the substance of the tumour itself cannot be accepted as evidence of the successful treatment of cancer." He also states that "the extreme amount of physical suffering has been the invariable result" of direct injection into the tumour or into its periphery.

In contrast with this dispassionate statement on the part of one whose interests in the ferment treatment of cancer have every appearance of sincerity must be placed numerous less balanced statements made by participants in the controversy which has been waged as to whether trypsin was of any use whatsoever. In America, Rice, Morton, Margaret Cleaves, Luther, and others have reported most favourable results in the treatment of the primary and secondary growths of a large number of cases of carcinoma and sarcoma. Bainbridge of New York has severely criticised the use Morton made of the data referring to a case of carcinoma of the breast which, as published by Morton, seemed to afford the most convincing evidence of cure.

In England success has been reported by Dr. Charles C. Scott, Dr. C. T. Hilton, Mr. O. H. Hudson, Dr. T. F. Cavanagh, Mr. H. Meggitt, and others, but lapse of time does not warrant the conclusion from the relief afforded that cures have been obtained. Investigators at the Middlesex Hospital and the London Hospital and at the Brompton Cancer Hospital have stated their failure to obtain satisfactory results similar to those recorded by some private practitioners. Dr. E. F. Bashford after testing the action of trypsin on the growth of tumours in mice has stated categorically that it is devoid of any influence. Mr. A. Carless has dissented from the deductions favourable to trypsin which have been drawn from Dr. Scott's case of apparent carcinoma of the large intestine. Dr. J. Alcindor has recorded one case of new growth in the iliac fossa and a case of carcinoma mammæ, in both of which untoward symptoms, combined with some apparent relief to the patients, accompanied treatment with trypsin during the last months of life. It appears very probable that only a very small proportion of the cases which have been treated with trypsin in England have as yet found their way into print, owing to the desire to await evidence that any benefit conferred will persist; but this paucity of reports is undoubtedly also due to the large proportion of cases in which no benefit has resulted or in which treatment has not been persisted in owing to the pain caused and the risk of undesirable complications.

In Germany the treatment of cancer by trypsin has aroused attention owing to the noisy prominence given to it in the lay and medical press in England and America. Von Leyden and Bergell, Gellhorn, and Bumm have stated that it has no practical value. Schöne summarises the whole question as follows: "As it is well known Beard recommended the use of trypsin for the treatment of malignant new growths, and more recently as the result of no less fantastic considerations which likewise will not bear searching examination, he has recommended the use of amylopsin. In spite of much competent investigation it is only possible to state that convincing successes are apparently absent." A. Pinkus, Kuhn, and Blumenthal have suspended their judgment on the value of the treatment. Blumenthal and A. Pinkus in reply to inquiry have protested against the misuse of their statements in support of the extravagant claims made for trypsin in England.

With rare exceptions trypsin has been applied by hypodermic injections. In some cases, however, it has been administered by the mouth or as a local application, and as regards the external use there is greater uniformity in the statements of results. Sloughing tissue is speedily removed, as was to be expected, and a clean surface free from sepsis

obtained painlessly, thus adding to the comfort of the patient in a manner not so easily attainable by other means. Mann reports satisfactory results of treating an excessive epithelioma involving the external ear and side of the neck by dusting with pancreatin in powder. The cleansing action of the trypsin proceeded till all dead and septic tissue was removed. Then the ingrowth of skin sufficed to protect the tumour tissue from its action at the margins. The deep extension of the tumour was not affected and the patient died 15 months after the treatment was begun but was made more comfortable during life by it. Whether the local application of trypsin in this way and adequately diluted has advantages which will enjoin its use externally in future remains to be seen.

Pending the time when as we hope the experimental study of cancer in animals will yield results of positive value in treatment, discursive controversies on the value of this or that alleged remedy, though to be regretted, must be expected. In the employment of remedies for the cure of cancer in man it is necessary that several years should elapse before finality in judgment can be attained. In the case of trypsin the results of experiments were invoked by Dr. Beard in support of his contentions. Two mice suffering from Jensen's carcinoma exhibited symptoms after the injection of two and a half minims of 1½ per cent. solution of trypsin, which Dr. Beard ascribed to intoxication by "the products of the tumour (an alcohol ?), as extracted and digested by the large dose of trypsin." The tumours were found to be in an advanced state of degeneration and necrosis. This appearance in the tumours would have been startling if any evidence had been advanced by an adequate number of control experiments showing that degeneration and necrosis did not occur independently of the treatment. As a matter of fact, it has been shown by Bashford, Murray, and Bowen that 90 per cent. of the tumours obtained by propagating Jensen's carcinoma exhibit very extensive necrosis; only a thin shell of healthy tissue may remain. These observers also treated with trypsin mice suffering from adeno-carcinoma mammæ, squamous-celled carcinoma, malignant adenoma and sarcoma in many series of experiments. In doing so they paid attention to any evidence of the symptoms of intoxication, the induction of necrotic degeneration and inhibition of growth, or of the specific action of trypsin on cancer tissue while sparing other tissues as described by Beard—but without being able to confirm his statements.

In the first place, active trypsin solutions are not without action on normal tissues. On the contrary, the solutions employed by them (even when diluted to the strength of 1 in 1000 and injected subcutaneously into mice in doses of 0·3 cubic centimetre to 0·5 cubic centimetre) produced great irritation and digestion of the overlying skin, so that in the space of one to three hours after injection the hair over the site of the fluid fell out and a large moist ulcer formed. Hence the doses of active trypsin which it is possible to give to mice subcutaneously without local destruction of tissue, and which are perhaps not inferior to the doses applied to the treatment of the human subject, are so infinitesimal that the absence of influence on the growth of tumours in mice so treated is not astonishing. To meet this objection other methods of application were sought. Intraperitoneal injection is also followed by digestion of the abdominal wall at the site where the fluid collects, the destruction of tissue tending to advance along the tract of the needle used to inject it. In their highest degree the consequences are speedy ulceration of the abdominal wall and escape of the intestines which appear to be not attacked. Both the above methods of administering trypsin in doses sufficiently great to be effective cause the greatest inconvenience to mice which suffer obviously from great pain and have to be quickly destroyed. It was found, however, that relatively enormous doses could be injected directly into the venous system and tolerated without any visible discomfort. A quantity of fluid almost equal to the total amount of blood in a mouse can be so injected, and, weight for weight of animal, doses of trypsin 300 times greater than those advised for administration to the human subject have been introduced into the circulation within a short space of time. The negative results on the growth of tumours bore out those obtained with subcutaneous injection.

The effect on tumour growth was tested in yet a third way. Mice were treated by the direct introduction of trypsin into the circulation before inoculation with a transplantable tumour and the treatment continued during the succeeding ten days following inoculation—i.e., till that time had elapsed within which the new tumours usually develop. The treatment was powerless to prevent the inoculated tumour tissue from "taking." The results were found to be quite independent of the amount of trypsin injected. The fact that the newly implanted tissue established itself disposes of the hypothetical objection that the other methods of testing trypsin had failed because the tumour cells had in course of treatment been able to immunise themselves against trypsin. The subsequent growth of the tumours in the mice which had been previously treated and continued to be treated with trypsin showed no differences from that of the tumours in normal animals not treated by trypsin.

Cavendish-square, W.

ON PREGNANCY, PARTURITION, AND THE PUERPERIUM AFTER VENTRIFIXATION (HYSTEROPEXIS HYPOGASTRIA).

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IN a large proportion of the cases of old-standing chronic backward displacement of the uterus our ordinary methods of treatment do not give satisfactory results. When the body of the uterus has become considerably enlarged after backward displacement, or when even the slighter tubal and ovarian complications exist, what could be expected from more or less forcible turning forward of the body and the insertion of a pessary in the consulting-room? There is an element of levity in this method of dealing with a flexion producing symptoms.

When the patient can be persuaded to take to bed and remain as long as if she had to undergo an important operation some good can usually be done. The congestion of the body of the uterus can be relieved by tampons and douches, the amount of the relief being measured by the diminution in the tenderness to touch and by certain changes in the visible portion of the uterus. When the uterus has been restored by tampons almost or altogether to its normal position, then is the time for the introduction of a pessary. In some uncertain proportion of even old chronic cases this method of treatment gives sufficient relief to satisfy the patient, and a small number of cases are actually cured in time. As a general rule, it may be stated that the older the patient the more suitable the palliative treatment.

But in married women at the child-bearing time of life, and in many single women who cannot, or will not, lead restful lives, the treatment by mechanical support is highly unsatisfactory and something more must be done. Let me emphasise this fact: ventrifixation is suitable only for women at the child-bearing period of life; the atrophying uterus after the menopause requires other methods of treatment. Schultze's process may be dismissed with a word. It has never done positive harm to any patient of mine as far as I know, but upon the whole it has given no satisfaction. A blind manipulating of adhesions and displacements could hardly be considered the best attainable treatment. Massage is not a suitable method of treatment with a view to permanent cure in such ailments, and it is fortunately seldom mentioned in this country. Schücking's operation, and similar timid, futile, and yet obviously dangerous proceedings, I have never tried, and never will. Sänger,[1] in introducing his own operation, "Über Retrofixatio Colli Uteri Retroflexi," in 1891, was very sarcastic in his references to Schücking, and yet his own vaginal operation of shortening the sacro-uterine folds and partly closing the pouch of Douglas was neither thoroughly efficient nor permanent in such benefits as it conferred. Alexander's operation of shortening the round ligaments obtained great favour for many years and still holds its place as a valuable method of treatment in a certain limited class of cases. The eagerness with which it

[1] M. Sänger: Operative Behandlung der Retrodeviationen des Uterus und Schücking'sche Vaginalligatur, Centralblatt für Gynäkologie, 1892, No. 1.

was adopted by gynæcologists throughout the world was a fair measure of the universal, though not audibly expressed, dissatisfaction with the usual mechanical treatment of displacements of the uterus. We may also now consider the number and variety of the recent modifications of Alexander's operation as a fair indication of the disappointment of operators who have applied it without sufficient discrimination as to its limitations. For my own part, after operating in 45 cases I abandoned the method of treatment altogether as the result of certain experiences to detail which would be too much of a digression. My troubles suggested to my mind serious objections to the operation in private practice owing to an element of uncertainty as to the possibility of its satisfactory completion. When completed in a perfectly correct manner it did not seem to me to stand well the test of pregnancy and parturition.

The modifications of Alexander's operation which have been most pressed upon the attention of gynæcologists appear to have all the weaknesses of the original operation, or to be more extensive and presumably more dangerous than ventrifixation. This objection attaches, for example, to the proceeding of opening the vagina behind the uterus in order to break down adhesions before dealing with the round ligaments themselves. And the objection on account of its formidable character applies, for example, to Goldspohn's modification, which involves all the details of abdominal section with two wounds instead of one, as in ventrifixation. He refers to it himself as "this bilateral inguinal cœliotomy and shortening of the round ligaments viâ the dilated inguinal rings." He also remarks: "It has become very clear that the simple Alexander operation without this interperitoneal work is generally too imperfect and imbecile a procedure ....." But his own modification is the operation which Goldspohr declares to be among "the most rational, innocent, and effective methods in the treatment of pathologic retroversions and retroversio-flexions of the uterus." Another American gynæcologist claims for his own modification all these advantages and that in addition it is "the most esthetic," whatever that term may mean under the circumstances.

The staggering array of modifications involving hooking and turning and twisting of the round ligaments from a wound in the vagina either in front of or behind the uterus, or by means of more or less formidable wounds in the inguinal regions, seem hardly worthy of serious attention except with the object of appraising their value and utterly condemning and rejecting them. They are at the best blind and uncertain.

The operation of ventrifixation efficiently done appears to me to be the best for the treatment of chronic retroflexion of the uterus in women at the child-bearing time of life. It was first suggested, I believe, by Olshausen in 1886, when he fixed the cornua of the uterus very slightly as an afterthought incident in an operation undertaken owing to other indications than backward displacement. The operation has been much practised with a defective technique in Germany, but, what implies a great deal in its favour, it has been taken up in France and practised on its merits, although originating in Germany.

My first operation was performed in September, 1890, and I gradually evolved a method of operating which has fulfilled all my hopes and expectations. As an operation of choice it had rigidly to comply with certain requirements or to stand condemned on its demerits. It does not seem to me to deserve condemnation: much the contrary. The tests which such an operation must stand appeared to me to be: (1) it must be devoid of danger when ordinary care is exercised; (2) it should be easy to perform, and the operator must feel certain in recommending it to a patient that he can undertake it with absolute certainty of being able to finish it as planned; (3) it must relieve the symptoms on account of which it was undertaken; (4) it must not produce any new symptoms that will even remind the patient for any considerable time that she has undergone an operation; (5) it must leave the patient free from any remote danger such as ileus, and permanently in a condition for active exertion and for all the duties of life indistinguishable from her original normal state of health; (6) it must stand the strain of pregnancy and parturition and the puerperium without abnormal distress, as if the operation had never been done; and (7) the uterus must continue after involution to maintain the position it was placed in by the operation. An operation which complies with all these conditions has many merits whatever *a priori* objections may be raised by preconception or prejudice, or whatever may be the terms employed to condemn justly an operation labelled "ventrifixation" by those who have met with the unfortunate experiences which were only to be expected from defective and irrational methods of operating.

In order to obtain the desired results certain principles must be kept in mind and complied with in every case. In the first place, the fundus uteri and the round ligaments must be strictly safeguarded, so that if pregnancy occurs it may run a perfectly normal course, as if "fixation" had not been produced. Another important object is to effect complete and permanent adhesion of a sufficient area of the *anterior* surface of the uterus to the abdominal wall. The ideal ventrifixation is that which results from Cæsarean section when the wound is longitudinal, involving about the middle third of the uterus, and extensive and complete and symmetrical adhesion takes place between the uterine and abdominal wounds. In these cases when pregnancy occurs again, as I have known it to do repeatedly, there are absolutely no abnormal symptoms, either functional or mechanical, resulting from the adhesion, and the operation may be repeated almost or altogether without opening the peritoneum. I have only once had occasion to open the abdomen in a patient who had undergone ventrifixation in the manner which I am advocating, and I took the opportunity of examining the relations of the uterus to the abdominal wall. The uterus appeared to be completely incorporated with the anterior parietes in its middle third, and yet the patient had never experienced any unpleasant symptom referable to the uterus or bladder during the several years that had elapsed since the operation. If this can be true in one case why not in all? We cannot avoid adhesions of bowel or omentum after an intra-abdominal operation producing a wound; we should therefore try to make the adhesions strong, regular, and useful instead of leaving them for chance to make them weak, irregular, and dangerous. Firm and broad attachment is not in itself troublesome or dangerous. The *a priori* objection to firm and permanent adhesion is opposed to all the lessons of experience.

Before going into the details of the operation let us consider what we should avoid. We can, perhaps, best do this by looking at the descriptions of the operation of ventrifixation or ventrisuspension in some of the manuals and text-books which beginners in abdominal surgery naturally consult for guidance, and by tracing the course of post-operation pregnancy and labour. Dr. Howard A. Kelly's method of operating has been much followed by gynæcologists abroad and to some extent in this country, but it is extremely faulty in several respects. The introduction of sutures "through the posterior surface of the uterus" should be in itself sufficient to condemn it. In what respect is it better than vaginofixation, the most dangerous and worst of all the important operations practised on women at the child-bearing time of life? Kelly's operation appears to be suspension of the uterus, not fixation; and to the extent to which it fails owing to stretching of the adhesions it benefits the patient only by relieving the fundus from its misplaced attachment, while it adds to her danger from ileus. No wonder that a large proportion of the patients operated upon according to Kelly's method who became pregnant experienced suffering from abnormalities calling for even Cæsarean section. But suspension injuriously affects all cases whether pregnancy occurs or not. It causes dragging upwards of the uterus instead of supporting it and makes it into an atonic pouch, with resulting menstrual anomalies and troubles and persistent intermenstrual discomfort.

When pregnancy does occur after ventrifixation or suspension the consequences may be very serious. Dr. Craigin[1] of New York in a recent article says: "Including the five cases reported in this paper there are now at least 40 cases of Cæsarean section on record which were demanded by a previous ventrifixation of the uterus." Dr. Polak of Brooklyn in a surgical thesis read before the American Gynæcological Society in 1908, entitled "A Report of 52 Pregnancies and Labours following Ventrisuspension of the Uterus for Retro-displacements," quotes from Kelly on the complications in pregnancy and labour which may follow ventrifixation. It should be kept in mind that Dr. Polak sets out *parti pris* as advocate of what he calls ventrisuspension as opposed to

[1] Surgery, Gynæcology, and Obstetrics, July, 1908.

ventrifixation. Among the complications are enumerated marked retraction of the scar; constant hypogastric pain; retraction of the cervix even into the abdominal cavity, the anterior portion of the uterus becoming a thick fleshy mass or tumour obstructing labour, the posterior portion becoming thinned out and even rupturing; atony of the uterus to an extreme degree; malpresentations; besides the regular troubles of pregnancy in the most distressing forms. This is the operation of which Dr. Clarence Webster of Chicago says in his text-book it "may be recommended." His own operation for backward displacement is a method of shortening the round ligaments. He passes them through the broad ligaments, then under the utero-ovarian ligaments, and fixes them to the *posterior* wall of the uterus. What will happen after such an operation when the woman becomes pregnant does not appear to be as yet indicated by any volume of statistics. I have looked through most of the American manuals of gynæcology and it may be stated generally that the authors follow Kelly or do worse. Dr. E. C. Dudley of Chicago, for example, whose work is deservedly held in high esteem in the United States, "uses two formaldehyde catgut sutures, one on each side of the posterior wall of the corpus uteri."

Among the books which are read in England for guidance is "Diseases of Women," by Dr. G. E. Herman. If I understand the author's meaning in the paragraph headed "How to Perform Ventral Fixation" I must say, with deep regret, that I regard his method as defective and faulty in almost every detail, even down to the "blunt" volsella. The first suture is made to enter close to the Fallopian tube; the abdominal muscle, not the peritoneum and fascia, is depended upon for adhesion, suspension, and support of the uterus; catgut is the material employed to fix the fundus in the wound and a silk thread is inserted still further back. Silk sutures passing through the skin and uterus are allowed to remain *in situ* for eight days, as if suppuration in the suture tracks was a thing to be aimed at. The patient is kept in bed only a fortnight—too short a time for the production of adhesions which will not be stretched by the weight of the uterus on exertion. The defects of the operation, described by Sutton and Giles, are in the material "fishing gut," which is referred to as if it stood on the same level of suitability with silk for buried sutures, and in the fewness of the sutures. The operation may be completed with one suture through the uterus and peritoneum only! "If desirable two or more sutures may be introduced." In the long run such suturing must inevitably produce a "new ligament," a bowel trap. Exercising such judgment as I am capable of, I cannot see why such operations should be designated ventral fixation, or why they should ever be expected to give more than temporary relief from the symptoms due to retroflexion. That relapse is common I am convinced from cases which I have had opportunities of examining after slipshod operations. The operation which used to be performed by Laroyenne of Lyons complied with all the requirements necessary to confer permanent benefit. Instead of using the volsella above the isthmus to steady and manipulate the uterus, Laroyenne employed a stem in the uterine canal which was managed by an assistant—a detail of the technique possessing obvious disadvantages. I understand that Laroyenne's disciples and followers have improved upon his methods in the direction which experience obviously indicated.

Some of the German operations appear to be worthy of imitation with modifications. Olshausen's method is defective in so far as he has adhered to his original method of fixing in the wound the cornua of the uterus and the Fallopian tube. The method, associated with the names of Leopold and Sippel, appears to be a good operation with the drawback that sutures pass through both the external integument and uterus. Ventrifixation is hardly mentioned by Küstner who writes the chapters on malpositions of the uterus in Veit's "Handbuch der Gynäkologie." Küstner makes much of the "beweglichkeit" of the uterus, but the need for mobility is a pure *a priori* assumption. He cannot find a shred of evidence in support of his objections in the practice of anyone who does an efficient operation by safeguarding the upper half of the corpus uteri. Compare also Döderlein and Krönig, "Abschätzung der verschiedenen Operationsmethoden gegeneinander" in Operative Gynäkologie.

The operation.—In performing the operation of ventrifixation I have discarded all suture material except catgut and the finest silk thread which can be conveniently manipulated. At first I used to try to close completely the vesico-uterine fold but now for several years I have introduced only two sutures, one at each side, well below the lowest point of the abdominal wound. This is quite sufficient practically to close the fold without interfering with the distension of the bladder, and it is therefore a preventive to any possible insinuation of intestine. The next step is to suture the peritoneum near the edge of the wound at each side. The fine silk sutures are introduced from the outside surface of the peritoneum, passed through the peritoneum, and after taking a good hold of the uterus low down and near its margin they are brought back through the peritoneum and firmly tied. The knot is thus always extra-peritoneal. Two or three such sutures are, as a rule, introduced on each side. The same process is now continued with this addition, that the next sutures include the fascia as well as the peritoneum on each side. The transverse sutures are next introduced. These are two or three in number; they consist of fine silk and include fascia and peritoneum at the sides, and each takes a fairly extensive hold of the anterior surface of the uterus. The highest of the sutures is placed less than half-way up from the isthmus to the fundus. In complicated cases, and when the prospect of pregnancy is very remote, the sutures have been placed occasionally a little higher. All the sutures that penetrate to any part of the uterine tissue are buried sutures at the finish. The abdominal wound is closed in the usual way, and it is an advantage to suture separately the edges of the fascia with fine silk. The last step in every case is the introduction of a glycerine pad pessary into the vagina to press forward and support the uterus as a splint during the formation of adhesions. The patients are kept in bed for about a month.

It will be seen that this operation of hysteropexis hypogastria differs in principle as well as in organic details from ventrifixation or ventrisuspension described in many articles and text-books. Among the most important of the differences in its bearing on pregnancy and parturition is the avoidance of thickening of the anterior walls of the uterus. My article on Hypertrophy and Erosion of the Lip of the Os Uteri, a Pathognomonic Sign of Chronic Flexion,[3] appears to me to have produced irrefragable proof by the logical method of concomitant variations that in chronic retroflexion the nutrition of the uterine walls varies with the relations of body to cervix, and in retroflexion there is always thickening of the posterior or concave wall of the uterus, the visible sign being hypertrophy with erosion of the posterior lip of the os uteri. If the uterus is brought into anteflexion to a pathological extent such thickening of the anterior wall and thinning of the posterior wall as to cause dystocia must be the result; if pregnancy occurs this thickening may even develop to the extent of requiring treatment by embryotomy or Cæsarean section. All ventrifixation operations in which sutures are introduced into the fundus uteri or farther back, and especially vagino-fixation operations, produce this pathological thickening of the anterior uterine wall and dangerous thinning of the posterior wall. Some very dreadful cases of complications resulting from this malposition have been reported from America and Germany. There are fewer from France, because of the prevalence of a better technique. On this subject, writing in the *L'Echo Médical du Nord* in 1904, Oui has been friendly enough to state: "The fixation of the fundus by Leopold, Mundé, and Noble, especially when it is fixed near the symphysis, is particularly objectionable. The only proper place for the insertion of the sutures is the anterior wall of the uterus below the line of insertion of the tubes. The methods of Sinclair and Laroyenne for this reason are preferable to those described by other authors." The aim of the operator should be to retain the uterus in a position the most nearly attainable to the normal anteversion without any undue dragging or tension at any point. If this rule is not observed the tissues of the uterus will resent the unnatural relationship, and if pregnancy occurs the most favourable result will be dystocia, the least favourable an obstetric disaster.

Another difference in favour of hysteropexis hypogastria is that it may justly claim to be an effective method for the cure of sterility. Pregnancy after operation instead of

[3] Journal of Obstetrics and Gynæcology of the British Empire, September, 1903.

being dreaded should be welcomed as confirming the cure, if for no other reason.

We meet with two classes of sterile patients suffering from retroflexion of the uterus with secondary changes. 1. It may be set down as a rule with few, if any, exceptions that the nulliparous woman whose uterus is retroflexed at the time of her marriage remains barren. In such cases hysteropexis hypogastria without any other treatment whatever is usually followed by pregnancy. One or two illustrative cases out of many will be given in the sequel. 2. The second class of cases is acquired sterility, often in the form of "one-child sterility." In such cases there is an ascertainable history of pregnancy and puerperal illness following full-term parturition or abnormal interruption of pregnancy. Such a patient is found on examination to have retroflexion of the uterus with complications which often include the results of the slighter forms of pelveo-peritonitis, such as adhesions, closing of the fimbriated ends of the tubes, and sclerosis of portions of the ovaries. Operation in such cases which does not include a full view of the affected parts and ventrifixation in an efficient form is sheer trifling and futility.

There is hardly ever the slightest reaction after this detailed operation in simple cases. It is practically devoid of danger. The pulse and temperature remain almost or altogether normal. No case has given rise to even momentary anxiety, except a case of mysterious acute sepsis which had a fatal termination. This operation has stood the tests of efficiency already mentioned in nearly 300 cases. Many of the operations have been done on account of prolapse of the uterus in comparatively young women, but I do not propose to complicate matters by discussing the treatment of prolapse on the present occasion. I will just remark that for prolapse the operation must be supplemented with colporrhaphy. In only one case was there a partial relapse owing to the imprudence of the patient. The operation had given satisfaction and was repeated, and the result has remained perfectly satisfactory for several years. A considerable proportion of the patients have borne one or more children since the operation. There have been some abortions and one or two cases of slight malpresentation, but not, I believe, to an extent greater than might be expected among the same class of women apart altogether from operation.

I have tried to get at the present state of health of the hospital patients but it is often difficult or impossible to trace them and obtain information. As far as I can learn there has been no case of relapse, even after labour, except the one just referred to.

ILLUSTRATIVE CASES.

CASE 1 (from the *Medical Chronicle*, 1894).—L. J., aged 28 years, a patient of Dr. Gardner of Royton. History of puerperal troubles after miscarriage. At the time of admission, October, 1891, the patient was suffering from retroflexion with adhesions. The ovaries not made out to be involved. The use of tampon and douche, followed by Schultze's process, failed to rectify the uterus. Operation of ventrifixation, Oct. 15th, 1891. Uterus found completely adherent to the floor of Douglas's space, with broad ligaments folded back, but the ovaries not dragged down. The adhesions were easily broken down and the uterus brought into the abdominal wound. Some hæmorrhage from the torn adhesions. Ventrifixation completed by eight sutures of catgut, silkworm gut, and fine silk. The wound closed. Easy recovery. This patient consulted me in the early summer of 1892. She was found to be pregnant between four and five months, and, as far as could be made out, the uterus was in the normal position, and beyond some sense of dragging about the wound there was nothing to complain of. The patient was advised to go into the Maternity Hospital for her confinement, and it was intended to make careful observations on the process of parturition. Labour came on and was rapidly completed in what was described to me as a perfectly normal fashion. It was only the day after the confinement that I learned what had taken place. The puerperium was carefully observed and there was nothing abnormal about it. Involution of the uterus went on in a perfectly satisfactory way and the patient went home with her child feeling quite well and comfortable, with the exception of some irritation of the bladder. She is again pregnant four months (January, 1894). She is wearing an abdominal belt and is quite comfortable, with the exception of one spot near the cicatrix, which is painful when rubbed. There is a small nodule at this point and it seems to be produced by an imbedded silkworm-gut suture. The fundus of the uterus is in the normal position for four months pregnancy. The cicatrix is quite firm and apparently adherent to the uterus.

When cases were accumulating with a monotonous regularity of favourable results I sent out a circular letter to medical practitioners who had had one or more patients operated upon by me. For the prompt, careful, and courteous replies sent in answer to my inquiries I desire to express my most grateful thanks.

CASE 2.—Dr. William Moir of Darwen writing in 1897 said: "You performed the operation of ventrifixation on Mrs. T—— of Darwen on May 14th, 1897. She made an excellent recovery. She had been married four or five years and not had a child. Within two months after her return from the Southern Hospital she became pregnant, and I advised her to go to the Maternity to be confined as I thought you would like to see her. She was confined there in 1898. ..... She told me the child had the cord round its neck twice and was dead. The house surgeon told her that was the cause of death. [Although my interest in ventrifixation cases was known to everyone in the hospital I had no opportunity given me of observing the process of parturition.] She had better luck next time. I confined her of a fine male child on Sept. 7th, 1899. The child and mother are both quite well. ....." Dr. Moir goes on to mention the formation of a sinus in the wound which healed again quickly on the removal of a silk ligature.

CASE 3.—Mrs. M. S., aged 29 years, operated upon at the Southern Hospital in January, 1902. Dr. W. Agar Renshaw of Altrincham, whom the patient engaged for her confinement, very kindly wrote me two letters about the case. In February, 1904, he said she was expecting her confinement in March and complained of bearing down; the uterus was in good position but the vaginal walls were prolapsed. Writing in June, 1904, Mr. Renshaw said: "She was confined on May 10th; she had rather a tedious labour, the face under pubes. I used forceps and the child came away without any force. She made a good recovery, got up on June 1st. I examined her on June 5th and found the uterus in good position, the os just within reach of the index finger."

The above is a good illustrative case, indicating the phenomena resulting from relaxation of the pelvic floor. The operation was done before the need for colporrhaphy in prolapse with backward displacement became demonstrated as essential to success.

CASE 4.—Mrs. S., aged 25 years, married two and a half years, one child aged 20 months, one miscarriage. Patient of Dr. W. Stewart, of Bacup. Admitted to Southern Hospital on Nov. 11th, 1902. Previous to abortion in February, 1902, no uterine trouble. Since February menstruation every 14 days, profuse; improvement last two months. Chief symptoms at present time backache and *incontinence of urine* after any considerable exertion. Examination: uterus large, in acute retroflexion, not fixed, but difficult to raise. As pessaries of various kinds with rest had been tried all the summer without favourable effect operation was recommended. Ventrifixation, Nov. 25th, 1902. Routine proceedings. Usual pessary to support. Nothing worthy of note in post-operation history except irritability of the bladder as before operation. On Dec. 23rd a note recording observation on vaginal portion: "Posterior lips of os diminished in size; anterior lip hypertrophied." Patient discharged apparently well on Dec. 30th, 1902. Dr. Stewart, in letter dated May 20th, 1908, says: "The patient, Mrs. S——, became pregnant in March, 1904, delivered in December. Trouble with bladder the whole time; for last two months incontinence. Duration of labour 12 hours, normal. Pregnant again August, 1907, delivered April, 1908. Bladder trouble the first three months, after that no discomfort or bad symptoms. Duration of labour six hours, normal. Examination yesterday, involution perfect."

CASE 5.—M. D., aged 31 years, III. para; hospital case. Patient's first pregnancy went to full term five years ago. She was attended by a drunken midwife who neglected to obtain medical assistance during puerperal illness. Five weeks after confinement patient was sent to Withington Poor Law Infirmary suffering from severe abdominal pain and double mammary abscess. She was confined to bed for four months altogether after the confinement. The second pregnancy terminated at full term three and a half years after the first—Jan. 19th, 1903. The whole labour did not last more than two hours. Could not suckle the child. Was able to get up in 14 days after labour. After the first pregnancy she had complained of pain in the lower part of the abdomen, and during the course of the second pregnancy she had again much pain. The pain became very much worse in Nov., 1903, but she did not seek medical treatment for six months or so. She was admitted as in-patient of the Southern Hospital in May, 1904. On examination, tenderness and resistance in left iliac region but no definite tumour made out by external palpation. P.V. deep laceration of the cervix with eversion. Well-marked cicatricial band in left lateral fornix. Uterus in retroflexion, held down by adhesions; tubo-ovarian tumour on both sides.

Operation: After several weeks of palliative treatment it was resolved to operate by abdominal section. Operation, July 12th, 1904. Both ovaries were found imbedded and bound down in adhesions; capsules thickened and ovaries partly sclerosed. The uterus was also firmly bound down with omentum adherent. Both ovaries were resected, about one-third of the left ovary being removed; wounds in ovaries carefully sutured and shreds of adhesion bands cut away. A fresh extensive ostium abdominale was made in the right occluded and distended tube; the left tube appeared sufficiently sound to be let alone. The operation was completed by the usual hysteropexis after the adhesions had been torn down and the body brought well up into the abdominal wound. The recovery was without incident. The operation of posterior colporrhaphy was performed on Dec. 14th, 1904.

History of third pregnancy and labour.—Menstruation was not so profuse after operation as it was before, and although painful it was not anything like so painful. Her last period was in September, 1905 (15-21), and was more painful than usual. She came to out-patient room in November complaining of bearing-down. She was admitted for rest and observation and remained in the hospital for four weeks. Pregnancy apparently normal except for purely subjective symptoms. She remained under observation as out-patient until the end of April. Nothing unusual noted. Although slight pains began on June 4th the patient was not admitted to St. Mary's Hospital until the 6th. The second stage lasted six hours, the third half-an-hour. Everything normal. Convalescence quite uneventful. For still another time in hospital cases after ventrifixation parturition was so normal that I was not informed until the day after labour. This patient was in much better condition than ever before and was able to suckle her child.

Note.—August 25th, 1906. Seen as out-patient. Involution of uterus complete; position normal; patient in very good health; plenty of milk in breasts.

CASE 6.—Mrs. S. W., patient of Dr. J. T. Fraser, Longsight, now aged 43 years, married 21 years. Ten children, seven living, oldest 19 years. Has had three children since operation; oldest of these five years, youngest five months, at the breast. Operation, ventrifixation, Dec. 19th, 1902. Obstetric history: Forceps were used at first three

confinements and she had post-partum hæmorrhage every time. It was on account of flooding after the seventh labour that Dr. Fraser was first called in by a midwife in attendance. At the time the patient was seen by me in consultation with Dr. Fraser the cervix was found to be so badly lacerated that it simulated malignant disease. The uterus was acutely flexed backwards. Ventrifixation was considered to be the best treatment. Patient at interview (June, 1908) said that her three confinements since the operation have been much "better." No hæmorrhage after labour. No discomfort during pregnancy. The uterus was found to be in normal position; not the slightest tendency to backward displacement. (This is Case 2 in illustration of the article on "Hypertrophy and Erosion ..... a Pathognomonic Sign" already referred to.)

CASE 7.—Mrs. W. L., aged 27 years; not been pregnant. Patient of Dr. A. Carmichael, Barrow-in-Furness. Retroflexion with symptoms; dysmenorrhœa worse since marriage. Examined under anæsthesia on May 11th, 1905. Uterus in acute retroflexion; body so large that it could not be manipulated forward without violence; not fixed by adhesion. Hysteropexis on May 13th, 1905. No divergence from the routine. Post-operative history without incident. Patient went home on June 21st. When pregnancy occurred in 1906 there were none of the usual symptoms, except amenorrhœa, and it was only the increasing volume of the uterus that settled the diagnosis. Labour began on Oct. 17th, 1906. It was rather slow at first and under anæsthesia occipito-posterior position was made out and rectified by manipulation. Forceps were then applied and labour completed without any incident worth noting. The puerperium was absolutely normal. The child was kept at the breast for some months, then the milk became scanty without apparent cause, except the maternal constitution.

These illustrative cases might be multiplied at intolerable length, but the present purpose can be served by the select few. The cases here given illustrate some of the chief points in the clinical history of pregnancy after hysteropexis. They are not chosen as the most favourable, but as characteristic some of them with even slightly unfavourable features.

The operation could not be pushed even though any one was foolish enough to try; it must be judged on its merits fairly stated, and proved by experience. I believe it will stand the test.

Manchester.

CANCER OF THE COLON: A STUDY OF 72 CASES.

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THE portion of bowel under consideration is that which reaches from the ileo-cæcal valve to the termination of the pelvic colon, that is about the level of the third piece of the sacrum. Cancer may occur anywhere in the colon, but it has a special selection for certain sites. It is convenient for the purposes of classification and treatment of cancer of the colon to divide the latter into its several arterial segments, by which I mean that the colon may be more or less divided into several portions by the vessels which supply it. Commencing at the cæcum these vessels are—the ileo-colic, the right colic, the middle colic, and the inferior mesenteric arteries. The ileo-colic and right colic arteries supply the cæcum and greater part of the ascending colon. It is better to consider this tract of bowel as one for the present purpose. The middle colic by its two main branches supplies the transverse colon and the termination of the ascending and commencement of the descending colons. The inferior mesenteric artery supplies the remainder. In this series of 72 cases the growths were distributed as follows:—

1. *Those in connexion with the ileo-colic and right colic arteries.*—17 were in this region. This site is conveniently called the cæcal region. The actual anatomical position of the growth is variable. In 16 of the cases the growth was examined either post mortem or as removed at operation. In only two was the cæcum entirely free from growth. The growth in these was in the ascending colon a little way above the site of the ileo-cæcal valve. In the remaining cases the cæcum was in whole or in part involved, often together with the ascending colon. Although all growths here are not strictly limited to the cæcum (on the contrary, a growth in the ascending colon may not invade the cæcum at all) I consider it better to include them under one heading since I believe that the lymphatic drain is very much the same, and hence from an operative point of view they are inseparable, and I think clinically they will generally not be distinguishable.

2. *Those in connexion with the middle colic artery.*—There were 18 in all situated in the bowel supplied by this artery. They were distributed as follows: (*a*) at the *hepatic flexure* there were five. These were more or less accurately at the flexure, but involved the colon on either side of the flexure also to some extent. (*b*) In the *transverse colon* without involvement of either flexure there were three. (*c*) In the region of the *splenic flexure* there were ten. The growth was not always strictly at the flexure, for in two cases it was at the commencement of the descending colon about two inches or so below the flexure. Such growths are in whole or in great part supplied by the middle colic artery and hence are included here.

3. *Those in connexion with the inferior mesenteric artery.*—There were 37 situated in the iliac and pelvic colons. The distinction of this part of the bowel into the *iliac* and *pelvic* colons is in accordance with anatomical description and founded upon the more common arrangement of the peritoneum. But the latter is very uncertain and for the present purpose it has no particular bearing and the bowel is best considered as one and called the *pelvic* colon. The only feature of importance which can be assigned to the division is that a growth occurring in the bowel which is fixed to the iliac fascia is more likely itself to become adherent than one in the bowel which is suspended by a mesentery.

The importance of determining which arterial segment bears the cancer is, I think, very prominently brought out in the study of the lymphatic drain of various parts of the colon. It seems to me of great importance to bear this in mind when operating for these growths. Any operation for cancer is not merely that of removal of the primary growth but also its lymphatic drain as thoroughly as can be performed in accordance with the anatomy of the part.

In the results which I am about to report it may be understood that all cases which were examined post mortem or specimens which were removed at operation were submitted to microscopic examination. Several sections of each gland were examined, but not serial sections.

Cancer of the Colon in many Cases a Local Disease.

Forty-one cases I have traced to the post-mortem room The duration of symptoms in these ranged from a week to three years. In only six were there any visceral deposits, that is, in just under 15 per cent. It may be pointed out that it was not in those which suffered from a long duration of symptoms that the visceral deposits occurred; on the contrary, however, for the duration of symptoms was comparatively short, varying from two to six months. In 20 further cases I have been able to trace the after history. Some of these were successful excisions, others were those upon whom colostomy had been performed. The latter were not microscoped, and hence the diagnosis must remain in doubt. But it is probable that most, if not all, were cancer, seeing that there are not many conditions which may be confused with cancer of the large intestine. Many of these cases I have seen personally; in others I am indebted to the medical practitioner in attendance for very kindly furnishing me with the notes. In only one was there evidence of secondary visceral deposit. In one other upon which an anastomosis had been performed the whole abdomen filled with growth before death, and it was impossible to say where it was. These clinical observations are obviously unsatisfactory, but they may at the least be regarde as suggestive and bearing out the post-mortem pathology. In the cases in which there were secondary visceral deposits post mortem the liver was involved in every one. In two in addition the ovaries were involved, in one case both ovaries, and in the second only one. In neither of these two was there any peritoneal deposit. Cancer of the ovary secondary to bowel cancer is well recognised and there are several papers upon the subject in the literature. The primary growth was in one at the commencement of the descending colon and in the other in the pelvic colon. In a further case the peritoneum was diffusely studded with tiny secondary growths, in addition to the infection of the liver. It may be gathered from these figures that cancer of the colon is in many cases a local disease and that secondary visceral deposits are not the great barrier to any radical operation.

The Lymphatic Spread.

In a communication to the *Practitioner* in 1903 I published some observations on cancer of the colon with especial reference to its lymphatic spread. Since that date I have had opportunities of extending those observations upon many more cases working on the same lines. The lymphatic drain

of the cæcum and appendix was the subject of one of the Arris and Gale lectures delivered at the Royal College of Surgeons of England in 1907. This lecture was founded upon the results of injection. I venture to think that the study of post-mortem pathology is equally useful and have confined my attention to that.

The Lymphatics Involved in Growths in the Cæcal Region.

This includes the growths which have also invaded the ascending colon or which are entirely in the latter portion of bowel at its commencement. There were 17 cases in all, of which 16 could be examined, 14 post mortem and two by the inspection of the specimens removed at operation. The situation of the glands was more or less constant. In only three-quarters of the cases were the enlarged glands infected. The glands were situated as follows. 1. In the ileo-colic angle there were always some found. The exact situation of these with relation to the bowel varied. Mostly they were more or less in close contact with the bowel, but at times they were at a little distance. 2. Continuous with (1) was a chain along the inner side of, and in close contact with, the ascending colon. The number of these and the height to which they ascended on the colon varied. In general they were only found on that part of the colon immediately above the ileo-cæcal valve. In a quarter of the cases these glands were not observed. In one case after excision of the growth I found some of this chain of glands left from a too low division of the colon. 3. Continuous with (1) were a few small glands on the upper border of the ileum. These varied in numbers. Generally only one or two were found. In one case a chain extended for five inches along the small intestine. 4. In two cases there were two or three glands found more posteriorly—that is behind the growth. In three the ileo-colic glands extended nearly to the bifurcation of the ileo-colic artery. In a further case of a very extensive growth, which had spread widely in the retroperitoneal tissues and the peritoneum, glands were found around the head of the pancreas. How the spread had taken place it was impossible to say, since the growth was very extensive and other glands, if any had been involved, had been swallowed up in the primary growth. In only this latter case could glandular involvement be said to be a factor prohibiting the radical operation. It was not, however, the only factor.

The operation for a growth in the cæcal region should be one which aims at the removal of the cæcum, ascending colon nearly to the hepatic flexure (this is necessary since the right colic artery must be sacrificed not because I have found any glands along the trunk of the vessel, but it often comes off in common with the ileo-colic, or, if not, at its commencement it lies very near to the latter, and if a free excision of the tissue around the ileo-colic is done the right colic cannot be spared), the retroperitoneal tissues and the leaf of peritoneum covering the two named vessels, the lower six inches or so of the ileum, and the termination of the mesentery corresponding to the ileal branch of the ileo-colic artery. This can be attained in the following manner. The abdominal wall is incised in the right semilunar line. The peritoneum is divided on the outer side of the cæcum and ascending colon. With two fingers in the hole so made used as a director the peritoneum can be divided up as high as the kidney. Caution must be exercised then because of the duodenum. When the latter is identified the peritoneum may be further divided and the colon separated from the kidney and duodenum. The cæcum, ascending colon, and some retroperitoneal tissue are then stripped up from the posterior abdominal wall towards the mid-line. The ureter and spermatic vessels are exposed and preserved. The lower ileum, cæcum, ascending colon, some retroperitoneal tissue, and a leaf of peritoneum can then be drawn out of the abdominal cavity. Removal is best commenced from above. The colon is cut somewhere about the level of the hepatic flexure. In a moderately spare subject the vessels can be recognised behind the leaf of peritoneum. These are the right colic and the ileo-colic arteries. They as often as not come from a common trunk. If they can be recognised so much the better. If not, by dividing along the line of uplifted peritoneum from above down, the first large vessel will be the right colic artery. The ileo-colic artery is then ligatured. The common trunk of these two vessels may only be encountered. This depends upon how far it has been possible to raise the peritoneum from the posterior abdominal wall and also upon the anatomical arrangement of the vessels. When the common trunk or the separate branches have been divided the section is carried down to the lower ileum so as to remove about the last six inches or so of it. Particular attention must be paid to the last intestinal branch of the superior mesenteric artery, and it should not be injured unless a corresponding length of small gut be removed. It is advisable to see this branch if possible and to plan the cut in the mesentery so that the ileum will be sectioned at the junction of the anastomosis of the ileo-colic and superior mesenteric arteries. In one case after removal of a cæcal growth there was gangrene of some length of small bowel. It will be easier to avoid cutting the intestinal branches of the superior mesenteric artery, I believe, if the section be commenced from above and the mesentery and lower ileum be left to the last. For by working in this way as more and more of the colon is freed it can be carried outside of the line of the direct field of operation, and by drawing upon it the lower mesentery can be stretched and a good view obtained of the anastomosis probably. There may be some glands behind the cæcum, but they are closely in contact with the latter and will readily strip off the iliac fossa. The end of the divided colon is closed and the ileum joined to the most accessible part of the transverse colon.

The Lymphatic Drain of the Bowel supplied by the Middle Colic Artery.

I confess my numbers here are far too small to be of any positive value and I only mention my results as being suggestive.

The hepatic flexure.—Five cases only in this series were at the hepatic flexure. Two of these were examined post mortem; in both glands were present near to the growth and also in the mesocolon at a variable distance from the transverse colon and extending some little way from the primary growth. One further case was successfully excised but is too recent to be of any value. Glands were present in the vicinity of the growth. In two cases the growth was adherent posteriorly and anastomosis was the only possibility. Growths in the hepatic flexure would seem to be peculiarly bad from the surgical standpoint. The arrangement of the peritoneum here varies; as often as not there is no mesentery to the colon which is in intimate contact with the duodenum and pancreas. No wonder is it that adhesions are early in these growths and that excision, as I judge from literature, has not been very often possible. The hepatic flexure is a more or less fixed part of the colon, but it can be readily made mobile. This is secured by a free division of the peritoneum on the outer side of the ascending colon and the serous membrane as it passes from the colon to the liver. If the gastro-colic omentum be also divided a considerable range of mobility is given to this part of the colon. This I should suggest as the plan of procedure in the removal of these growths. I suggest also that the corresponding half (or as much as can be) of the mesocolon requires removal in order to secure the lymphatics which pass here. The section of the bowel may be begun at the transverse colon and will be somewhere about the middle of the latter as the right branch of the artery will be cut. If the ascending colon has been freed by division of the peritoneum along the outer aspect it probably may be joined to the cut end of the transverse colon. In separating a growth from the pancreas and duodenum only a little of surrounding tissues can be removed. The amount will depend upon the extent and development of the mesentery in the region. By commencing the section at the transverse colon a clearer view of the parts will be given.

The transverse colon.—There were only three growths here. One was successfully excised. This was a large growth in the centre of the transverse colon. The glands in the immediate vicinity only were affected. Cancer cells were not found in the glands. Nearly three years later the patient developed intestinal obstruction and died. The obstruction was caused by adhesions. There was no evidence of any recurrence of the cancer. In a second case the growth was irremoveable. There were many enlarged glands in the mesocolon and in the great omentum. Lateral anastomosis was performed. One case was examined post mortem and here glands only close to the growth were enlarged.

The splenic flexure region.—There were ten cases of cancer here. The growth was practically at the flexure in eight and in two was really at the commencement of the descending colon. Seven were examined post mortem, but in only six have I a note of the glands. In one the growth was of large proportions and adherent to neighbouring structures and no glands could be found. In the five cases glands were enlarged in the vicinity of the primary growth, in the angle of the flexure or a little posterior to it in relation to the spleen, or to the inner side of the descending colon. In one case glands were found in the adjacent great omentum. In three glands were also present in the mesocolon near to the lower border of the proximal transverse colon. In a further case which was successfully excised the patient is well six years after. In this there was a chain of glands running along the transverse colon and half of the latter was removed. In four out of the six cases the glands were infected with cancer. Glands *per se* would not have prevented a radical operation in any one of these cases.

I would suggest that the removal of a growth in the splenic flexure region be planned on the same lines as that for one of the hepatic flexure. The splenic flexure may be mobilised by division of the peritoneum on the outer side of the descending colon and the costo-colic ligament. I would also suggest that the corresponding half of the transverse colon also requires removal in-order to remove the lymphatic drain which is in the mesocolon. I have not seen glands in association with the left colic artery but it seems probable that the lymphatics may pass this way. The descending colon, after division of the peritoneum on its outer border, may be stripped inwards over the lower pole of the kidney and freely excised with the possible lymphatic drain along the left colic vessels.

The Lymphatic Drain of the Ilio-pelvic Colon.

The inferior mesenteric artery supplies this tract of bowel. Arising from the inferior mesenteric artery at about half to three-quarters of an inch from its commencement is the left colic artery. The latter runs upwards and to the left well over the iliac crest to the descending colon, anastomosing with the middle colic artery below the splenic flexure. The left colic artery may be said to supply that part of the colon from two inches or more below the splenic flexure to a point in the iliac fossa. The anastomosis between the left colic and the next vessel (the sigmoid artery) is a little below the level of the iliac crest. The sigmoid artery arises from the inferior mesenteric artery just below the left colic. It usually almost at once divides into two branches of nearly equal size. These vessels form arches which supply the loop of bowel from somewhere near the iliac crest to the lower end of the pelvic colon—that is, to about three inches or so above the peritoneal reflection at the base of the pelvis. The sigmoid vessels are for the most part between the layers of the mesentery of the pelvic colon but if the latter be absent in the iliac fossa for a short course the upper arteries may be retroperitoneal. The third vessel from the inferior mesenteric is the superior hæmorrhoidal artery. This passes over the pelvis in close contact with the brim and supplies the lower part of the pelvic colon.

Assuming that the glandular drain from the pelvic colon would more or less closely follow these vessels the first care is to determine from which arterial segment of bowel the cancer arises. This has been possible in many cases without any dissection. But in those cases where the mesentery is short the point may further be demonstrated after freeing the bowel by division of the peritoneum in the iliac fossa on its outer side and stripping it in towards the mid-line. The bowel is thus separated from the iliac fossa with the retroperitoneal tissue over the ureter and spermatic vessels to the origin of the inferior mesenteric trunk. By prolonging the incision in the peritoneum down along the pelvic wall, taking care to avoid the above-named structures, which have been already exposed and can therefore be readily protected, the whole ilio-pelvic colon may be separated from all its connexions, except the vascular supply and the leaf of peritoneum on the mid-line aspect. This enables the arteries to be freely exposed and it may be determined which vessel supplies the cancer-bearing portion of bowel.

Eighteen post-mortem examinations were made upon growths in the pelvic colon. In 16 of these the growth was in that part of the colon supplied by the sigmoid artery. In two it was quite low down and was supplied, anyhow in part, by the superior hæmorrhoidal artery. In no case was a growth situated in that part of the colon from two inches or so below the splenic flexure to the middle (about) of the iliac fossa. In some (two at least) of the growths in the splenic flexure region the left colic artery in part supplied it, or presumably it did as judged from its situation. I have not found any glands along this artery but then my chances have been too few to observe growths in this region, but nevertheless should consider that in such growths it would be advisable to remove the descending colon, the peritoneum, retroperitoneal tissues, and left colic artery. In 17 of the 18 cases enlarged glands were present. In every instance they were found in close proximity to the primary growth. In six glands were found at some distance from the primary growth near to, or at the base of, the mesentery. They were more or less in association with the vessels supplying the bowel. If the bowel were well freed as described above it was seen that the glands were not the retroperitoneal ones along the iliac vessels, but were actually situated between the layers of the mesentery. The extent of the glandular enlargement varied in these six cases, but in three it may be said that the highest gland was well below the origin of the sigmoid artery, whilst in three glands were higher than this and were more or less in connexion with the inferior mesenteric artery, and even higher than this, that is, they were the lumbar chain. Believing that the spread would tend to be finally along the inferior mesenteric artery I have always looked particularly for glands along the latter vessel, but have only found them in the cases indicated. In many cancer was absent in the glands, and, in fact, in only two-thirds of cases were cancer cells found. In addition to these post-mortem examinations there were eight cases of excision, with a very moderate resection of mesentery. In one a local and superficial glandular recurrence took place; this was excised and four years later there was no evidence of recurrence. A second recurred extensively in the lumbar glands. Five of the remaining six are in good health at intervals varying from ten months to three years. The sixth cannot be traced.

These figures incline one to the belief that cancer in this region is, for some time anyhow, a more or less local disease and involves those glands only in the immediate neighbourhood. It also shows that all enlarged glands are not necessarily cancerous, and it may be suggested that if the radical operation is thought impossible on account of glandular involvement only the operation need not be always at once renounced, but may be undertaken in the hopes that the level of an extensive resection will be above the most distal glandular cancer-infection. It may be mentioned here that in this series glandular involvement only was not in any single instance a barrier to the radical operation. In three cases, it is true, glandular infection would have, I think, prevented removal, but in these there were other contra-indications, such as adhesion of the primary growth.

Although a very fair amount of success has in this series been attained by the removal of a very moderate amount of the lymphatic tract it is not my intention to advocate such a limited resection. My observations lead me to the belief that in cases where the cancer is in that part of the bowel supplied by the sigmoid artery a resection of this loop with the contained mesentery to the origin of the vessel will be the most satisfactory method of dealing with it. It is quite easy to ligature the inferior mesenteric trunk nearly at its origin with the removal of the tissue around it, but in the cases I have examined with glands along this vessel this would not have been sufficient. It has always seemed to me that such a procedure would of necessity mean a colostomy, and having very serious doubts whether anything is gained by it I think that a resection just below this and the avoidance of a colostomy would in the majority of cases be equally efficient.

The operation in brief is as follows. A long left paramedian incision gives the best access. The peritoneum is then divided in the iliac fossa to the outer side of the colon; this division may extend up some distance along the descending colon if necessary, and may be prolonged downwards into the pelvis. The colon and the retroperitoneal tissues are stripped up from the iliac fossa over the ureter and spermatic vessels which are seen and guarded, and it is necessary to expose these before the incision is carried down into the pelvis. This freeing of the colon may be carried

on until the inferior mesenteric artery itself be seen. By spreading out the loop of bowel the individual branches of the artery may be seen unless there be an excess of fat. The intestine is then divided above and the incision in the mesentery is carried in to the trunk of the sigmoid artery, which is ligatured. The section may then be carried down the mesentery so planned as to avoid the superior hæmorrhoidal artery which will be found in close proximity to the pelvic brim, but with the intestine and mesentery on the stretch of course it may be a little displaced. The lower end of the colon is divided somewhere about the level of the pelvic brim. This will insure the intactness of the superior hæmorrhoidal artery and in addition will leave sufficient stump to enable an intra-abdominal anastomosis to be performed. If the separate vessels are not identified because of excessive fat then the operation may be conducted in precisely the same manner. The bowel may be divided at the upper end almost as high as the iliac crest without danger of the left colic artery. If the mesentery be divided now directly inwards towards the base of the sacrum the first large trunk will be the sigmoid artery. This vessel can thus be identified and the rest of the operation is as before. If the growth be situated low down in the pelvic colon, that is in that part supplied by the superior hæmorrhoidal artery, then the latter must be sacrificed and also the retro-peritoneal tissues in front of the sacrum. This operation cannot probably be completed intra-abdominally. It has always seemed to me a colostomy could not be avoided. But if this portion of bowel can be spared the upper end of the divided colon, which has been rendered mobile by the division of the peritoneum on its outer border, can be brought straight down to it.

Since preparing the above I have read a very interesting paper by Mr. B. G. A. Moynihan. This is in direct contradiction to my observations. Mr. Moynihan says that there is always a gland on the inferior mesenteric artery which must be removed. This gland would presumably lie about an inch or so higher than the line of section which I have indicated. Personally, I have not been able to find glands here except in the few instances mentioned already. It is what I should have expected to be the natural finding. But finding it so rarely, and believing that it was not the glands which formed the great contra-indication to the radical operation, and also thinking that ligature of the inferior mesenteric artery would entail a very extensive resection of the descending colon, I have advised the more restricted removal than that advocated by Mr. Moynihan. In the cases in which I have seen glands on the inferior mesenteric artery there has been more than one, and I have considered in such cases that all attempts at a radical operation would be out of the question. Mr. Moynihan considers that this gland which he describes and has found constant is the highest of the chain and must always be removed. I have always considered that ligature of the inferior mesenteric artery would necessitate excision of the greater part of the descending colon and that union of the two ends would be impracticable. But Mr. Moynihan has shown that this is not so. He says that the upper end of the sigmoid flexure is freely supplied with blood even after the inferior mesenteric trunk has been divided. Mr. Moynihan describes the operation he practises for cancer in this region, and I cannot do otherwise than cordially recommend anyone interested in the subject to read the paper where everything is most clearly stated. The paper is in *Surgery, Gynæcology, and Obstetrics* for May, 1908.

Clinical Features.

It is best to differentiate the growths in the cæcal region in considering the clinical characters, for they are not in all respects similar to those elsewhere.

The main clinical characters of growths in the cæcal region.—There were 11 males and six females. The youngest patient was 30 and the oldest 73 years. The ages ranged in decades were as follows:—

Between 30 and 40 years...	2 cases
,, 40 ,, 50 ,, ...	6 ,,
,, 50 ,, 60 ,, ...	4 ,,
,, 60 ,, 70 ,, ...	4 ,,
Over 70 years...	1 case.

In two cases there were apparently two separate abdominal growths. In one a small growth in the stomach and in the second an extensive one in the rectum were present in addition to that in the cæcal region. In the latter the abdominal symptoms were due to the rectal growth and it must remain unknown whether there were any which could be attributed to the cæcal one.

The most constant symptom is pain. This was in nine out of 15 cases of the nature of colic. In others it was a more or less persistent pain in the right iliac fossa without reference to any intestinal disturbance. Apart from the colicky pains in the majority there was no other evidence of chronic intestinal obstruction. The bowels were not constipated neither were any coils in peristalsis seen, and it may be mentioned that post-mortem examination often did not show any hypertrophy of the small gut, as would be anticipated if obstruction had been present. Two, however, did suffer definitely from obstruction which ended subacutely, and a further case gave a history of having been obstructed for three days a short time before he came under observation. In the latter three the bowels were definitely constipated, but in the others there was little alteration from what may be considered normal to each of the individual patients. One patient passed a large quantity of tarry material at the beginning of his illness (six months before coming under observation). This was presumably blood. In no other instance was any blood noticed by the patient. On two occasions there was at times diarrhœa, the motions containing a little mucus. Loss of flesh was constant in all and it was often a very noticeable feature of the illness.

The presence of a swelling was very constant in cæcal carcinoma. The growths here are often of the large, bossy, and luxuriantly growing type and form masses of large dimensions. But in addition also the cæcum is quite superficial and easily palpable. In two a large abscess was present and a tumour could not be felt. In one (the case which exhibited a rectal growth) the tumour was very small and not palpable. In one (an obese patient) a tumour was only felt under anæsthesia. In two cases chronic obstruction had ended subacutely and abdominal distension was marked when the patients first came under observation. In neither of these was a tumour palpable, but in all probability in a flat abdomen it would have been readily felt.

It must not be inferred that symptoms have been in existence for some time before a tumour may be detected clinically. In two the swelling was present practically from the time when the symptoms commenced. In two others it was known to be present very shortly after pain in the region was first experienced. In the remaining cases, judging from the size and easy palpation of the tumour, it could have in all probability been detected at a much earlier period.

The main symptoms of a cæcal growth may be said to be pain, colicky or a persistent ache, generally absence of true obstruction, normal regularity of the bowels, and the presence of a tumour, associated with a progressive loss of flesh and deterioration of health. It may be noted that it is not uncommon to have a little fever. The thermometer may register 99° F. or a little higher at times even in the absence of suppuration. This may be septic absorption or perhaps in some way due to the growth. This has occasionally been noted in uncomplicated growths elsewhere in the colon.

Three cases had the complication of suppuration around the growth. In one of these the onset was as a subacute appendicitis, but after draining the abscess for some weeks a firm swelling became palpable and later it fungated through the sinus. There were no symptoms of obstruction. In the second case there was a large abscess which had probably been present for some weeks. In the third case there was a very small collection of pus around the growth, not sufficient to cause adhesions which prevented removal. The similarity in such cases to appendicitis is marked, as it may be in uncomplicated cases of cæcal cancer.

Continued irritation as a possible etiological factor could not be asserted to be present in a single case. It may be thought that chronic constipation and an overloaded cæcum, stercoral ulceration, or a chronic appendicitis might have some influence, as irritation seems to play a part in some cases of cancer elsewhere. Chronic appendicitis seems not infrequently to have been present in many cases of carcinoma of the appendix. In not a single instance was it present in this series. Chronic constipation was nearly always absent. In only two cases have I noted it. Judging from the frequency which many writers of great experience regard cancer of the stomach to be preceded by a simple ulcer it might be thought that a similar condition would prevail in the rest

of the alimentary canal. I have been particularly careful in my inquiries to ascertain the previous history, and in no case have I been able to suspect the sequence of simple inflammation and cancer in the intestine.

At the time when the patients came under observation it was only possible to excise the growth in five cases. Suppuration, adhesions to the posterior abdominal wall, to the anterior abdominal wall in one case and the small intestine were the reasons why extirpation could not be performed. I have traced two cases of excision. One was operated upon six years ago and is now in good health. In this the whole cæcum, ascending colon, and a part of the transverse colon with the lower ileum were removed. The second case, a less extensive resection of the colon, is well two years after.

Three cases of anastomosis I have been able to trace. Two died in five and seven months respectively. The third is alive but very weak nine months after the operation.

The clinical characters of growths elsewhere than in the cæcal region.—Age incidence.—The youngest was 15 and the oldest 89 years of age. Arranged in decades the numbers were as follows:—

Under 20 years	1 case.
Between 30 and 40 years	5 cases.
„ 40 „ 50 „	10 „
„ 50 „ 60 „	17 „
„ 60 „ 70 „	15 „
„ 70 „ 80 „	6 „
Over 80 (89) years	1 case.

The sexes were about equally affected. There were 29 male and 26 female cases.

Of the 55 cases, I have been able to learn the previous history of 46. In eight of them there was a history of long-continued constipation. In three this had been present practically the whole lifetime. In the remainder it had been present for some years. But constipation was the only feature in these. It was never associated with any pain, diarrhœa, or hæmorrhage, neither was there any symptom elicited suggestive of a simple stricture. In other words, I have not traced in any case the relationship between malignant disease and simple inflammation of the bowel.

The onset of symptoms could practically in all cases be dated with precision. It invariably affected persons in otherwise good health with the exception of those who suffered from chronic constipation, and this was not regarded as anything other than normal by these patients. In a few cases the onset was not quite so definitely fixed. The patients described their symptoms as of a few weeks' or months' duration. But in by far the majority of cases the onset was more or less abrupt and its time of occurrence could be fixed with great precision. The symptoms of cancer are, of course, those which are directly dependent upon a progressive narrowing of the lumen of the bowel and the consequent hypertrophy of the gut above. Recurrent spasms of pain, gurgling of flatus as it is forced through the stricture, the discomfort caused by the inhibition of free passage of intestinal contents, anorexia, gradual failure of health and weight, and a progressive difficulty in the evacuation of the bowels are the main features. The hypertrophied gut above the stricture may be felt, or might be brought into prominence by a little gentle rubbing of the abdominal wall. This ought to be an early sign of a progressive stricture. Such symptoms were in general present in this series. They are all familiar and require no special comment. There are other clinical characters of which brief mention may be made. These are (1) the characters of the motions, and (2) the presence of an abdominal tumour.

1. There is constipation in the majority from the very commencement of the illness. But in a few this has not been so. In this series in about one-ninth this was said not to be present until some time after other symptoms. But in all it sooner or later was present. It may be that the bowels do not move daily or every other day, but what is of equal importance is that the quantity of fæces passed is distinctly less than normal. Attacks of diarrhœa sometimes occurred. Such were noted in about one-sixth of cases only, and in these the growth was in the pelvic colon with one exception, where it was at the splenic flexure. These attacks generally occur after a period of more than usually obstinate constipation. Some catarrh is no doubt set up by the retained and irritating intestinal contents. When the stricture relaxes and allows of a passage once more these catarrhal products are hurriedly rushed along and the result is that several loose motions may be passed for a day or so. Such motions may contain mucus and even blood. This was not a common symptom in this series. It is what is generally referred to as alternating constipation and diarrhœa. Constipation was the characteristic and diarrhœa the exception. When such spurious diarrhœa occurred it was unusual to have more than two or three attacks, and it would be very misleading to give as a symptom of cancer of the colon alternating constipation and diarrhœa. Apart from this diarrhœa mucus was observed in the motions on five occasions. Four of these were growths in the pelvic colon and in one the growth was at the splenic flexure. Blood in the motions was absent in the majority of cases. By this is understood visible blood; in no case was a microscopical or chemical examination made to determine its presence or absence. In one in the transverse colon, two at the splenic flexure, and in only 14 out of 37 growths in the pelvic colon was blood noted. In all it was particularly asked for and the stools were examined whenever possible.

2. *A palpable tumour.*—A tumour was by no means alway felt. Its presence will depend upon its situation, its size, and the state of distension of the abdomen. When the abdomen was not too distended to permit of examination a tumour was felt in this series as follows. In two cases out of three at the hepatic flexure, every case (three) at the transverse colon, in three cases out of seven at the splenic flexure, and in seven cases out of 22 in the pelvic colon. In two additional growths in the latter region a mass of undetermined connexions was felt through the vagina. A tumour was palpable therefore in 15 cases out 35 in which the condition of the abdomen permitted of examination—that is, in about 43 per cent. of cases.

The duration of the symptoms of incomplete intestinal obstruction varied considerably before becoming complete. In one the earliest symptom was acute obstruction. No previous history of intestinal trouble could be elicited in this case. The patient was first seen when obstruction had been present for three days and the abdomen was generally distended without evidence of the site of obstruction. That the obstruction was chronic was easily seen from the hypertrophy of bowel. Compensation had been so well maintained that previous to the sudden obstruction there had been no trouble whatever. In two further cases the onset was ten and 12 days previously with an attack of subacute obstruction which yielded to simple measures. Obstinate constipation was present during the succeeding few days which culminated in complete obstruction. Obvious bowel hypertrophy of some duration was present in these cases. The duration of symptoms in the others was from two months to three years. About one-third during this period had suffered from one or more attacks of threatened obstruction which had yielded to aperients or enemata. It may be mentioned that in many (about two-fifths) the administration of frequent and strong aperients had probably actually produced the final obstruction. This may be considered as a warning.

In considering the causes of the terminal obstruction it may be said that there was not one case of volvulus of the bowel above nor one of intussusception, both of which are given as occurring sometimes. In one case the obstruction seemed to be enhanced by the kinking and adhesion of a lengthy loop of bowel above the growth. In two others it was probable that an abscess around the growth determined in part the obstruction. In no case could the impaction of a foreign body or fæcal accumulation be said to be the cause of obstruction.

The onset and progress of the terminal obstruction varied somewhat. In three acute dilatation of the cæcum was the earliest sign. So sudden was this and so pronounced was the distended cæcum that a volvulus or some other mechanical acute obstruction might have been suspected. All three cases gave a comparatively short history. In three in which the symptoms had been by no means urgent but merely those of chronic obstruction an acute dilatation of the colon occurred. The abdomen rapidly became swollen, vomiting was profuse and foul-smelling, and collapse was decidedly marked. Compensation in these had been maintained up to a certain point and then it would appear that the colon suddenly gave out. Possibly antiperistalsis may explain the cases of acute dilatation of the cæcum. In the majority the obstruction was more slowly progressive. The abdomen more slowly distended due to the more or less gradual distension

of bowel farther and farther away from the site of obstruction. Well-marked peristalsis of small and large intestine was seen showing that whatever may have been the previous history the obstruction had been present for some time. The diagnosis of the site of the obstruction when the latter was complete with well-marked distension and peristalsis was in the absence of any palpable tumour impossible. A tumour in such cases was felt in five cases only.

Suppuration or perforative peritonitis occurred in 12 cases. In all except one the inflammation was in the peritoneal cavity. In this the growth was at the pelvic colon adherent in the iliac fossa. A large abscess was present in the iliac fossa behind the peritoneum and tracking upwards towards the lumbar region; this was traced directly to the growth. There are three ways in which the peritoneum may become infected:—

1. *An ulcer in the cæcum may perforate.* There were five cases in this series. In three this occurred during the period of complete obstruction. In each the peritonitis was diffused. The growth was in the pelvic colon in two and at the splenic flexure in one of these. In the two cases, although chronic obstruction had been present for some time, it had not terminated acutely. These growths were in the pelvic colon. In both the cæcum was much distended, as shown at operation. In one, in addition, a perforation had occurred just above the growth and the abscess had travelled up along the colon and formed a collection of pus under the left diaphragm around the spleen, with infection of the pleura.

2. In six cases the infection occurred *through the base of the growth.* In three of these the peritonitis was diffused. In only one of these three did the perforation occur when the obstruction was complete. In three a localised abscess formed around the growth, slowly and insidiously without any acute onset and not during the period of complete obstruction. In five the growth was in the pelvic colon and one at the splenic flexure.

3. In one case only did perforation of a stercoral ulcer above the growth occur and cause diffuse peritonitis. This occurred in the period of complete obstruction. The growth was in the pelvic colon.

In two cases there was an intestinal fistula. In both a growth in the pelvic colon had communicated with the bladder.

The occasions when it was feasible to perform a radical operation were comparatively few. In tabular form with contra-indications this is shown as follows:—

—	Removal possible.	Removal impossible.
Hepatic flexure.	2 cases. 1 was removed; the second complete obstruction, unsuccessful colostomy.	3 cases, adhesions posteriorly.
Transverse colon.	2 cases; only 1 operated upon.	1 case, fixed posteriorly.
The splenic flexure.	2 cases, both removed; 1 successful; 1 succumbed from obstruction due to adhesions.	8 cases. 1 had secondary deposit in liver, locally removeable; 1 secondary ovary and adherent to parietes; 2 diffusely adherent to small intestine; 2 fixed to parietes; 1 perforative peritonitis; 1 localised abscess.
Pelvic colon.	13 cases; 10 excised: eight successful, two deaths. 3 completely obstructed, unsuccessful colostomy.	24 cases. 1 case had diffusion of growth over the peritoneum, extensive glands and secondary liver; 1 secondary ovaries and liver; 2 adhesions and secondary liver; 6 adherent to pelvic brim or sacrum; 4 adherent to pelvis and small gut; 10 cases complicated by perforative peritonitis or localised suppuration.

In only 19 out of 55 cases would it have been possible to remove the growth. Adhesions to surrounding structures were the great barrier. Secondary visceral deposits were once of themselves the only cause. Glands was a possible cause in one case of a growth in the transverse colon and in three of the growths of the pelvic colon would have prevented removal, but there were other contra-indications also present in these three cases. I have considered that in all cases where perforation or localised suppuration has occurred removal was contra-indicated. It is possible that if some of the cases of perforation of the cæcum had been operated upon before the catastrophe removal might have been performed.

Results of Operation.

1. *Excision.*—One case of excision of the hepatic flexure is quite recent. One of resection of the transverse colon remained in perfect health for three years. He then developed acute obstruction from adhesions and died. There was not a trace of growth in the abdomen. One case of excision of the splenic flexure is well, six years after. Of eight resections of the pelvic colon only seven can be traced. One recurred in the glands and died nine months after the operation. A second recurred in the glands after the primary operation; these were excised and he was well four years afterwards. The remaining five are well at intervals of ten months, 14 months, 17 months, two years and ten months, and three years.

2. *Anastomosis.*—Two cases of growths in the hepatic flexure lived four and 13 months respectively. One case of the transverse colon lived eight months. One case of the splenic flexure (this was associated with local suppuration) lived four months, and the second nine months.

Harley-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NEW COMBINATION ELECTRIC WAVE APPARATUS AND ITS THERAPEUTIC VALUE.

BY W. STANSFIELD, M.R.C.S. ENG., L.R.C.P. LOND.,
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AND
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WE have been impressed by the results obtained by the use of what we believe to be a new modification of the three-phase electrical current in the treatment of atony of muscular tissue, either striped or unstriped. The instrument which we have recently clinically tested is known as the Lloyd combination wave apparatus; it is simple and inexpensive. A four-volt accumulator drives a motor generator with three commutators producing three currents; there is a device of a shunt across the armature for the production of three minor currents. These three major and minor currents, all of sine nature, are led to three ordinary induction coils, from which wires are connected to three-pad electrodes. An electrical brake on the motor and a rheostat render the speed of the contractions well under control. In treatment of atony of the alimentary canal one pad is placed in the lumbar or sacral region and the remaining two on the abdominal wall. The three minor waves seem to modify the effect of the three major waves as seen in the ordinary three-phase apparatus, and the effect is to produce a painless contraction of the muscles.

We have been using this apparatus for nearly a year and the following are notes of a few cases:—

CASE 1.—A. B., a slight pale lady with a congenitally small liver, never remembered having her bowels opened naturally, her motions always being of a very light colour. She was ordered an aperient strong enough to produce one motion a day and her diet was regulated. The three electrodes were used as described, the apparatus started in a manner to produce slow contraction, and with the two front pads the abdomen was massaged. After a fortnight's daily treatment of 10 to 15 minutes at a time the colour of the motions improved and she required less aperients. Aperients were entirely stopped at the end of three weeks, and the treatment was continued another week. Some three months later there had been no relapse.

CASE 2.—C. D., a little girl, aged eight years, pale, weak, and undersized, had not had her bowels opened without assistance since she was six months old. She was treated only 21 times in two months, at the end of which she was taking very little medicine and often doing without, the electric treatment sufficing.

CASE 3.—E. F., a middle-aged lady, had suffered with constipation for two years, her abdomen being lax and flabby with a loaded colon. She was treated daily for three weeks, also with gradually decreasing doses of aperients. She was entirely relieved at the end of this time, her spirits and appetite better, her figure much improved, and she was stronger in every way.

CASE 4.—G. H. was suffering from severe neuralgia of the fifth nerve. She had been under treatment for some time with the usual remedies and had received no benefit. We placed one pad on the abdomen and

one on each temple. Two morning applications gave her relief for the day, but as the pain came on again at night for three days she was treated twice a day, for nine days once a day, and for a few days longer on alternate days. Except for a few short attacks soon after treatment commenced she had no further pain.

In cases of bladder trouble it has not proved so successful in our hands as is reported from other sources, but one case is worthy of note.

CASE 5.—J. K., a hard-working, sensible girl, had been troubled all her life with frequent micturition, having during cold and damp weather to micturate every ten minutes. For some years past she had to stop from work during winter months. The whole trouble was purely nervous. She had had various medical treatments and had been in nursing homes, receiving little or no benefit. We applied one pad over the lumbar region and the other two well down over the pubes, taking care that they did not touch each other and (as in all cases where it is suspected that the nerves are at fault) the current was used as rapid as possible. This patient improved at once and was able to keep to her work all the winter, but if the treatment stopped for a fortnight she began to relapse, which resulted in her coming for treatment two or three times a week during the cold months.

This form of electrical treatment gives relief in pains of rheumatoid arthritis but we have not been able to give it a fair trial in this class of disease. We ought to mention some difficulties that may arise in treatment. If there is the least break in the cuticle, as a scratch or pimple, the current is painful at this point; such places are best protected with rubber strapping. Laparotomy scars also often give considerable pain during treatment.

The following is a tabulated list of the cases which have been treated with this combination wave-current :—

Condition.	Result.
Constipation with atony of colon.	Recovery 88 per cent.
Alternating constipation and diarrhœa.	Unsatisfactory.
Nervous debility.	Recovery 70 per cent.
Alcoholic neuroses and general paralysis of the insane.	*Nil.*
Rheumatoid arthritis.	Appears to be beneficial.
Dyspepsia.	" " "
Enuresis.	Improvement while under treatment 80 per cent.

Liscard.

NOTES ON A CASE OF ACCIDENTAL POISONING BY CHLORIDE OF ANTIMONY.

BY J. MIDDLETON, M.D. EDIN.

ON account of the clinical features presented, not less than the comparative rarity of accidental poisoning by the salts of antimony, it appears desirable to place on record the following case which recently came under observation.

About 4 P.M., during the temporary absence of the mother in an adjoining part of the house, a male child, aged 16 months—the child is said to have walked since he was nine months old—crawled from his cradle placed on the floor, crossed the apartment, and mounting on a chair managed to reach the top of a dresser standing fully four feet high, near the centre of which stood a firmly-corked bottle containing a preparation which the father, a shepherd, was in the habit of using as a dressing for the feet of sheep affected with foot-rot. Withdrawing the cork, the child put the bottle into his mouth and swallowed a portion of its contents, whereupon the mother was attracted by his screams. It is, of course, very difficult, if not absolutely impossible, to estimate with any measure of accuracy the actual amount of the poison swallowed, but making full allowance for what was spilt on the child's clothes and about him, and having regard to the father's estimate of the quantity contained in the bottle, which had been reduced by fully three tablespoonfuls, it appears probable that the child must have swallowed at least two teaspoonfuls of the liquid. About half an hour before taking the poison the child had a small quantity of milk and a little bread and butter.

Immediately upon discovering what had happened the friends administered hot salt and water and continued to do so at short intervals till my arrival. I then learned that the child had vomited pretty frequently and that the vomit which at first appeared to contain little else than particles of bread and curdled milk, gradually changed to a dark coffee-ground appearance, and this statement I was able to confirm by an examination of the earlier and later vomits, all of which had been retained for inspection. The bottle from which the child had drunk was found to be correctly and carefully labelled "butter of antimony," and still contained about three ounces of a dark orange-coloured fluid, a few drops of which when added to water yielded a whitish-yellow precipitate. When seen about an hour after the poison had been taken the child presented the following symptoms. He lay in a heavy, drowsy state extended on the knees of a neighbour, his head being thrown forcibly back, from time to time exhibiting a struggling and choking sensation, clutching at and complaining of pain in his throat. The lower limbs were alternately forcibly extended or drawn upwards and flexed over the abdomen. Both upper and lower extremities were markedly and persistently cold. The pulse was barely perceptible; the pupils were widely dilated and inactive and there were frequent muscular twitchings. The general condition, indeed, was one of pronounced collapse. The chin, lips, tongue, the whole interior of the mouth, and the fauces were whitened in the same manner as by the action of strong carbolic acid and there was some difficulty in swallowing, accompanied by considerable regurgitation from the nares. There was a very marked tendency to doze but the child could be readily roused to take fluids, his thirst being intense. The vomiting of dark coffee-ground matter continued, though at lengthening intervals, during the greater part of the following day and diarrhœa presenting similar characteristics set in about 16 hours after the poison had been taken and persisted for fully 48 hours. Even after the diarrhœa was checked the fæces continued for some days to present a preternaturally dark colour. When the vomited matter was submitted to Reinsch's process abundant evidence was afforded of the presence of antimony, and the urine when similarly treated yielded traces of the metal during the two following days The child was fed with milk and white of egg for the first 24 hours, after which barley water or rice water was added. A mixture containing equal parts of compound tincture of cinchona and tincture of calumba was given first at short and later at gradually lengthening intervals, and in about a week from the taking of the poison the child was apparently in his normal health and taking his customary food.

Manorhead, Stow.

A CASE OF RHEUMATIC HYPERPYREXIA.

BY THOS. E. B. MEYLER, L.R.C.P. & S. IREL.

THE rarity of hyperpyrexia during the course of acute rheumatism in children makes any example worth recording.

The patient, a boy aged nine years, was seen by me for the first time on August 30th, 1908. For the past seven weeks he had complained of a stiff neck, which was painful on movement, and of slight pain in the legs, but he was able to attend school. I was called in because when he awoke in the morning he could not move the left arm. I found him in bed, free from pain except in the neck which was not swollen or tender. The pulse-rate was 136 and the temperature was 99·6° F. The tongue was clean and the patient was perspiring. The apex beat was in the left nipple line, about one inch lower than the normal. Impulse was forcible but there was no thrill. The aortic second sound was clear. There was a loud mitral pre-systolic murmur and a systolic murmur was well heard at the left scapular angle. The lungs were healthy. The left upper extremity was completely paralysed and flaccid. The other limbs were not affected. The urine was high-coloured and was free from albumin. There was no change in the condition of the patient until Sept. 3rd, when I was hastily called to him at 6 A.M. I found him deeply comatose and breathing stertorously. The pupils were contracted, the face was cyanosed, and the skin was hot and very dry. The temperature was 109·2° and the pulse was uncountable. Violent purging took place. Ice not being available cold sponging was used, but the patient died in an hour, the temperature rising to 110° just before death.

Experience has shown that hyperpyrexia is most frequent in first attacks of rheumatism, also in cases which run a mild course. Both these points are illustrated by this case.

Chevening-road, W

Reviews and Notices of Books.

The Substance of Faith Allied with Science: A Catechism for Parents and Teachers. By Sir OLIVER LODGE, F.R.S. London: Methuen and Co. Pp. 135. Price 2*s.* net.

To afford instruction in religious principles to children in such a manner as to be consonant with the knowledge which they acquire of science in the course of their secular education is a task which must of necessity present difficulties to parents and even to teachers owing to the lack of the special knowledge and experience required to reconcile apparent discrepancies which may present stumbling-blocks to the keen intelligence of the thoughtful child. Sir Oliver Lodge, fearful "lest the nation, in despair of a happier settlement, should consent to a system of compulsory secularism," endeavours in this small catechism to outline a scheme of instruction whereby the fundamental principles of religious belief shorn of sectarian or doctrinal complexities may be expressed in terms which are not in conflict with existing knowledge. In illustration the facts of nature as seen around us are employed and the essential truths of religion and science are thus taught in relation to one another, with the object of formulating a creed. The nature of man is first outlined, and the meaning of existence, of ancestry, of the general principle of evolution, and the development of man from lower forms of life is explained. Next the development of conscience and its meaning are traced, then the sense of responsibility and its relation to character and will, thence the duty of man to assist his fellows, to develop the higher phases of his nature, and to strive towards betterment is deduced. Good and evil are defined and their place in the scheme of nature is indicated and the means whereby to know good from evil are detailed. In defining evil the fact that it is not absolute but has reference to a standard of attainment is clearly emphasised, and as a corollary it is pointed out that evil is a necessary consequence of a rise in the scale of moral existence, and that, therefore, sin is the deliberate choice of evil where the good is possible. The general principle of Immanence or the Intelligence everywhere indicated in all the processes of nature is then developed:—

> "Earth's crammed with Heaven,
> And every common bush afire with God."

This, indeed, is the whole purpose of the book—to inculcate the lesson that the controlling Thought and Purpose is immanent in everything. Man's higher faculties, with special reference to the spiritual side of his nature, are next considered and in connexion therewith the idea of a beneficent Deity is evolved, One who is willing to help man in his struggle to higher things. Sir Oliver Lodge gives on p. 96 a creed expressing in simple words the general principles which he has illustrated. The subsequent sections are developments of some of the principles enunciated in this creed, including the conceptions of eternal life, of prayer, and of the Kingdom of Heaven.

The book is written in simple style, is throughout reverent, and inculcates Christian doctrines in a way that must commend it to all who are concerned in the religious instruction of children.

Manual of Midwifery. By T. W. EDEN, M.D., C.M. Edin., F.R.C.P. Lond., F.R.C.S. Edin., Obstetric Physician, Charing Cross Hospital. New (second) edition. With 42 plates and 236 other illustrations. London: J. and A. Churchill. 1908. Pp. 555. Price 12*s.* 6*d.* net.

THE early appearance of a second edition of this book is a proof of the favour with which it has been received by students and practitioners, a favour which is well deserved. Dr. Eden has carried out a careful revision of this edition and by placing a number of the more important illustrations on separate plates he has succeeded in increasing the amount of letterpress without increasing the size of the volume. Several of the chapters have been partly rewritten and additions have been made, more especially to those on the sections dealing with abdominal palpation, the puerperium, and infant feeding, while a section has been added on premature rupture of the membranes, the consideration of which had been omitted in the first edition. A number of new illustrations, many of them original, have been introduced. The difficulty which the placenta seems to present to artists as a subject for illustration is well shown by Figs. 22 and 23, both of which are decidedly poor. The book as a whole is practically unaltered and forms a most excellent and trustworthy text-book, quite the best of its kind in the English language. Naturally we do not agree with all that the author says, nor do we think that there are not points in the book which would bear further emendation in future editions.

The importance of abdominal palpation is more fully recognised in the present edition than it was in the first and a good account of it is now given. The question of the exact size of the uterus at different periods of pregnancy always seems to be a stumbling block to the writers of text-books. Possibly this is due to the fact that different authors when discussing the height of the fundus uteri at the different months of pregnancy are not particular enough always to consider the subject with the body in the same position; thus some of the levels are measured with the patient standing upright and others with the body lying on the back. Dr. Eden tells us that measurements of the height of the fundus of the uterus above the pubes are somewhat fallacious, and in this statement we quite agree unless the conditions under which they are taken are clearly stated; at the same time, we think that the method of describing the level of the upper border of the uterus in relation to the position of the umbilicus is even more fallacious and misleading. We see no object in the author's recommendation to shift the grasp of the hand to the shank of the axis-traction forceps instead of continuing to pull on the traction rods, the correct method, when the head of the child is near the outlet of the pelvis; nor do we think that as a rule much is to be gained by removing the forceps before the delivery of the head. It is a pity that in the excellent plates representing delivery by the forceps the hands are not represented as covered by rubber gloves, possibly a counsel of perfection but none the less often an important precaution. In the treatment of ophthalmia neonatorum it would be better to give the exact strength of the solution of silver nitrate or protargol to be instilled into the eyes.

In spite of these minor criticisms we are of opinion that this is a most trustworthy book and we congratulate Dr. Eden on the success which it has attained.

A Manual of the Practice of Medicine. By FREDERICK TAYLOR, M.D. Lond., F.R.C.P. Lond., Consulting Physician to Guy's Hospital; Consulting Physician to the Evelina Hospital for Sick Children; Physician to the Seamen's Hospital, Greenwich. Eighth edition. London: J. and A. Churchill. 1908. Pp. 1111. Price 16*s.* net.

THIS text-book is too well known to require any words of introduction from us; suffice it to say that Dr. Taylor has succeeded in offering a short yet complete account of the present state of medical practice which will be useful to students and practitioners. He has devoted most attention to the description of symptoms, to diagnosis, to prognosis, and to treatment, rightly feeling that they are the divisions of the subject which best answer to the idea of practice. In the preparation of the present edition every part of the

work has been carefully revised and the necessary corrections and additions have been made so as to bring the whole fully up to date. The latest researches in regard to the etiology of sleeping sickness and of yellow fever have been duly recorded, and changes have been made in the sections dealing with the examination of the nervous system and in the description of the diseases of the blood. Entirely new matter has been introduced on the subject of opsonins and opsonic methods, paratyphoid fever, kala-azar, senile paraplegia, diseases of the sympathetic nervous system, diseases of the muscles, heart block, Vincent's angina, congenital hypertrophic stenosis of the pylorus, and ochronosis. An interesting account is given of Stokes-Adams disease and the part which is played in its pathology by the bundle of His is carefully explained. The sanatorium treatment of pulmonary tuberculosis is scarcely described at sufficient length. The rules which govern exercise, both as regards nature and amount, could with advantage be given more fully in future editions, but the symptomatic treatment is more usefully detailed.

Students will find this manual a satisfactory one to read for examination purposes but its employment must of course be supplemented by practical work in the wards and out-patient rooms. For practitioners the work will prove of value for rapid reference and for refreshing the memory when they are discharging the actual practice of their profession.

Cataract Extraction. By H. HERBERT, F.R.C.S. Eng., late Lieutenant-Colonel I.M.S., Professor of Ophthalmic Medicine and Surgery, Grant Medical College, and in Charge of the Cowasjee Jehangir Ophthalmic Hospital, Bombay. London: Baillière, Tindall, and Cox. 1908. Pp. 391. Price 12*s.* 6*d.* net.

THIS is a book which no ophthalmic surgeon should fail to read. It gives in considerable detail the methods and opinions of a surgeon who has had great experience in the extraction of senile cataract amongst the natives of India, a country notorious for the prevalence of the disease and one to which we are already indebted for many valuable communications on this branch of ophthalmology. We are told in the preface that the volume embodies an experience of about 5000 extractions, "a comparatively small experience for an ophthalmic surgeon of standing in India." Such a remark is likely to prejudice the reader adversely at the outset, for it savours somewhat of unnecessary modesty. How many surgeons in India have performed more than 5000 extractions?

The first chapter deals with operable cataract, a description of its forms and stages, and the question of artificial ripening. In discussing the conditions which determine fitness for operation we are told that it is accepted that infection of the conjunctiva from the nose by way of the lacrymal passage does not take place, an unduly dogmatic statement. In dealing with the general health in the same connexion no reference is made to the condition of the mouth and teeth; the dangers of oral sepsis should not be ignored in an exhaustive treatise of this nature. It is interesting to note that the author's measurements of lenses show that the average normal lens of the native of Bombay is probably appreciably smaller than that taken from Priestley Smith's measurements in England, in correspondence with the poorer average physique in Bombay. On Priestley Smith's theory this would account for the comparative rarity of primary glaucoma. The description of the operation which the author favours occupies 136 pages. After a brief account of the various kinds of section which have been advocated in the past the instruments and irrigators are described. In addition to preliminary sterilisation by boiling the cystitome, forceps and irrigator nozzle were frequently sterilised in the flame. Cocaine, with or without adrenalin, was used for rendering the eye anæsthetic. During the operation a mouth-screen of flannel stretched over a wire frame was employed. Two points require special mention among the initial steps. In addition to the great prevalence of chronic conjunctivitis the natives of Bombay apparently produce an enormous amount of Meibomian secretion. Expression of this secretion with the fingers was therefore invariably performed. Great stress is laid upon the importance of irrigation of the conjunctival sac with perchloride of mercury lotion. Lieutenant-Colonel Herbert used a strength of 1 in 3000 applied for from one minute to one and three-quarter minutes. The usual operation was the ordinary sclero-corneal section with a conjunctival flap combined with iridectomy. The individual steps are described at length and in great detail; they differ little from those commonly adopted. A single vertical incision with a cystitome was generally employed for opening the capsule; the lens was expressed with a tenotomy hook. Irrigation to remove lens cortex was apparently used fairly frequently by means of a simple syphon douche containing 0·7 per cent. salt solution. At the conclusion of the operation the curette was passed lightly over the whole of the palpebral conjunctival surface to remove mucus.

The third chapter is devoted to expulsive hæmorrhage and vitreous accidents. The fourth chapter treats of variations in procedure and their value. Noteworthy here are the indications for the use of Czermak's downward section with subconjunctival pouch and of simple extraction; the latter method was seldom adopted though the author was using it more often towards the end of his time in Bombay. Ophthalmologists will read with interest Lieutenant-Colonel Herbert's remarks on extraction of the lens in its capsule. The revival of this method, inaugurated in India by Mulrony at Armitsar in 1890, has received an impetus from the work of Smith at Jullundur, some account of which has been given in THE LANCET recently by this surgeon.[1] The author's strictures on Smith's claims, contained in the first paragraph under operative procedure on p. 253, however true they may be, coming from a colleague in the same service had better been expressed otherwise. We think that the advantages and disadvantages of the operation are discussed judicially and with a proper sense of the gravity of the subject. The conclusion that the method is one of strictly limited applicability is, we consider, inevitable, and will ultimately be the generally accepted view.

In the matter of asepsis the author is to be congratulated upon his results: he had no suppurations amongst the last 1655 extractions and only one in the previous 1172. Panophthalmitis with total loss of the eye is clearly meant, for cases of slighter infection are recorded. It is difficult to follow up cases in India, and perhaps the results would appear less favourable if this could have been done more fully. All ophthalmic surgeons are cognisant of cases which go wrong in spite of minute precautions, and we are strongly of the opinion that the author is extremely ill-advised to have allowed the following sentences to occur in his book: "The general trend of recent work is to fix the responsibility for infective accidents very definitely upon the surgeon. In the not distant future we may find this responsibility recognised by the patient and possibly upheld in law courts." Surely this is going much farther than is warranted by the facts, and is the more deplorable in that it is likely to be quoted in the law courts as the authoritative opinion of an expert.

The analysis of visual results does not reveal such exceptional statistics. In 1262 cases operated upon in 1905–06 bad results—i.e., loss of vision or vision of moving bodies—only

[1] THE LANCET, August 15th, 1908, p. 452.

occurred in 1·7 per cent.; poor and fair results—i.e., vision of less than 6/60—in 6·2 per cent. No details are given of the vision in the results considered good. The remainder of the work deals with after-complications and the treatment of complicated and soft cataracts. There is one phrase—"vitreous tension"—which occurs repeatedly in the book. It implies the tendency to prolapse of vitreous which is found in a certain fairly well-defined group of cases. The condition is one so entirely different from any to which the term tension is usually applied that the designation is undesirable and should be replaced by some other having greater regard for pathological accuracy.

Summing up, we may reiterate the opinion expressed at the commencement of this review. It is a book to be read and pondered over by experienced ophthalmologists. It is not suitable for the beginner who will be unnecessarily discouraged by it. Even the expert practising in more advantageous circumstances will be well advised to refrain from taking every statement *au pied de la lettre* but he cannot fail to find much which will prove of value.

The Theory of Ions: A Consideration of its Place in Biology and Therapeutics. By WILLIAM TIBBLES, M.D. Chicago, LL.D., M.R.C.S. Eng. London: Rebman, Limited. 1908. Pp. 131. Price 2*s.* 6*d.*

WE may not agree with much that the author says in regard to the importance of the position occupied by the theory of ions, but we are bound to admit that he has succeeded in collecting an amount of information on the subject which brought together in the compass of the small volume before us will be distinctly helpful to those who are anxious to keep pace with modern ideas on those questions which bear upon vital phenomena.

In the author's view the ionisation of materials plays a rôle in the evolution of the living from non-living substances. The continuous adjustment of the internal relations of materials to the external relations is, he suggests, brought about by the ionisation of matter, the transformation of energy, and the definite combination of these heterogeneous changes both simultaneous and successive; and these, in correspondence with external co-existences and consequences, result in the development of the dead into the living, the inorganic into the organic. As far as human faculty can interpret things there would appear to be strong reason for believing that the ions are capable of appearing at one time as one substance and at another time as another substance—in a word, that the ion can serve as both a constructive and destructive agent. Ionisation thus takes place in living structures and the presence and activity of ions would seem to be essential in biological processes. There are chemists, of course, who reject this view, which, after all, is based on physical conceptions rather than chemical. They may, perhaps, be jealous of the claims of their science, but as Dr. J. S. Haldane said in his admirable address in the Physiological Section of the recent meeting of the British Association for the Advancement of Science at Dublin, while we have accumulating knowledge as to the physical and chemical sources and the ultimate destiny of the material and energy passing through the body we have an equally rapidly accumulating knowledge of an apparently teleological ordering of this material and energy, and for this teleological ordering we are at a loss for physico-chemical explanations. The spectre of vitalism, he added, meets us at every turn thinly disguised under such names as "cell autonomy," "vital processes," and so forth. The same argument, it seems to us, applies to ions. The theory of ions, in a word, expresses in a refined way the physico-chemical changes involved in biological processes. The theory is helpful inasmuch as it presents probably a more exact interpretation of biological phenomena. But there still remains the spectre of vitalism.

The theory of ions is also going to be helpful in the service of medical science in other directions, for it has already thrown some light on the fate and action of substances for medicinal purposes. To take one case and to quote Dr. Tibbles: "The effect of the salt is the algebraical sum of the effects of its individual ions. Anions and cations antagonise one another; cations precipitate, anions inhibit the precipitation in proportion to their power. All cations have certain physiological characters in common: they precipitate protein. They more or less increase the irritability of muscle and nerve; they excite intestinal activity and increase the blood pressure. The anions have a solvent action on protein or, to speak more correctly, they inhibit the action of the cations in general. The physiological effect of the anions and their solvent action upon proteins increases through the scale from sulphate to sulphocyanate. The sulphates, citrates, and tartrates are protein precipitators, because the anion is associated with the over-balancing properties of the metallic ions, they are therefore cathartics. But in the nitrates, bromides, iodides, and sulphocyanates the anion has the predominating influence, the characteristic effect of which is sedative, attended by a decrease of blood pressure."

It is probable that subsequent investigation will prove that the theory of ions will eventually place many observed phenomena of medical science upon a more satisfactory scientific basis than hitherto, and the subject is therefore worthy of the attention of medical men, and a word of thanks is due to Dr. Tibbles for bringing together in this comparatively small volume the modern views upon the subject. We are surprised to find that he does not once mention the distinguished author of the theory: we refer to Michael Faraday.

LIBRARY TABLE.

A Short Practice of Midwifery for Nurses, as used in the Rotunda Hospital, Dublin, for the past Ten Years. By HENRY JELLETT, B.A., M.D. Dub., F.R.C.P. Irel., ex-Assistant Master, Rotunda Hospital. Third edition. London: J. and A. Churchill. 1908. Pp. 463. Price 6*s.* 6*d.* net.—*Infancy and Infant Rearing: an Introductory Manual.* By J. B. HELLIER, M.D. Lond., Professor of Obstetrics in the University of Leeds. Second edition. London: Charles Griffin and Co. 1908. Pp. 164. Price 3*s.* 6*d.* net.—*Introduction to Infectious and Parasitic Diseases, including their Cause and Manner of Transmission.* By MILLARD LANGFELD, A.B., M.B., Professor of Bacteriology and Clinical Medicine, John A. Creighton Medical College, Omaha. With an Introduction by LEWELLYS F. BARKER, Professor of Medicine at the Johns Hopkins University. London: Rebman, Limited. 1908. Pp. 260. Price 5*s.* 6*d.* net.—*Practice of Medicine for Nurses.* By GEORGE HOWARD HOXIE, A.M., M.D., Professor of Internal Medicine in the University of Kansas. With a chapter on the Technic of Nursing by PEARL L. LAPTAD, Principal of the Training School for Nurses of the University of Kansas. London and Philadelphia: W. B. Saunders Company. 1908. Pp. 284. Price 6*s.* 6*d.* net.—Text-books intended for nurses are multiplying with almost the same rapidity as those for the use of medical students. We presume this supply is created by a demand and that it reflects an increased standard of examination knowledge required from nurses in the course of their training. We are inclined to think that it would be better to expect them to rely firstly upon their ward experience and secondly upon notes of the lectures given them at their own school, carefully revised under some tutorial system, and in the last place upon knowledge gained from text-books. The temptation which these afford to cram a superficial smattering of a

wider field of facts than enter into a useful or even legitimate mental equipment for the nurse must be irresistible to many young women of retentive memory and quick intellect; and the encouragement which their consequent examination successes bring them may well give them enough assurance to "put the doctor right" to their patient on some matter in which his treatment is founded upon a knowledge of those Institutes of Medicine of which they have the baldest and often merely parrot-like acquaintance. Doubtless many nurses with the requisite opportunities for a proper and statutory training would make admirable medical practitioners, but if their profession is to be nursing and not medicine we regard the present movement to give them a sort of bastard medical education to be unfortunate as tending to minimise the very important duties of nursing pure and simple. It is fair to say, however, that a number of text-books are published for nurses which have a perfectly legitimate function.

Of the four volumes before us that on midwifery has a special reason for its existence in that it is intended for the instruction of a legally recognised subordinate class of practitioners of midwifery as well as for nurses who act under constant medical instruction. Midwifery, too, is a subject which, even in its most elementary study, presents problems such as the mechanism of labour that can be greatly elucidated by an intelligently written text-book, and such a one is Dr. Jellett's, the success of which has been proclaimed by the issue of this third edition. Dr. Jellett is careful to define in his preface the limitation of the nurse's sphere of action. His claim to have simplified the book in this edition is justified and there is now no need to repeat the criticism which we were obliged to make upon its first appearance in the present guise. The scope of the work has been indicated in our columns previously. The present edition contains the rules of the Central Midwives Board for the regulation of midwives' practice and a glossary of terms which should be of service for nurses. We note that Dr. Jellett, in the preface, disclaims any connexion between this work and a book of similar aim written by a former Rotunda colleague.—Dr. Hellier addresses his manual on *Infancy and Infant Rearing* to an even wider audience, to wit, firstly, pupil midwives; secondly, health lecturers; and thirdly, students and practitioners. It will be seen that he has set himself a difficult task, for much that would be useful instruction to the last class would be entirely unnecessary for the needs of the two others. The book, however, contains little that could not be learnt with advantage by an intelligent midwife or "health visitor," and we should imagine that its appeal to medical students was an afterthought of the author; if this were the case the afterthought was justified, for there are many hints in it concerning the normal progress of childhood a knowledge of which will redound to the credit of young practitioners. The important sections on feeding are done carefully and not too elaborately, and Dr. Hellier's pages contain certain shrewd observations which lift it above the level of many books about babies. The sections on infants' diseases are quite insufficient for the student's needs, which is as well, considering that they are addressed to others to whom fuller instruction might be dangerous.

The other two volumes hail from America. Dr. Langfeld's book on *Infectious and Parasitic Diseases* is another volume which though "primarily intended for nurses" has been extended to meet the requirements of medical students. This book is of a class that seems to us quite unsuited for the instruction of nurses, for we regard the author's statement that "the trained nurse's position as medical assistant to the doctor and as a sanitarian has developed into one of such extraordinary importance" to be an overstatement. We consider the nurse's duties as a nurse to be of paramount importance. No nurse requires instruction concerning antibodies or on the methods of making cultures and blood films. The volume, which is nicely printed, affords a useful little introductory manual to parasitology for medical students; its chief claim to utility and originality is in its etiological consideration of infective disorders. The chapter on animal parasites is well written. If a future edition should be called for Dr. Langfeld would do well to amplify it and to address it to medical students and practitioners alone, unless the conception of the nurse's functions differs widely in America from that held in this country.—Dr. Hoxie, in the preface to his *Practice of Medicine for Nurses*, the last of this batch, acknowledges that the nurse should neither diagnose nor prescribe. He states further that his book's part purpose is to help those who care for the sick in the home. We think that his work would be an unwise addition to recommend for a layman's bookshelf; there are quite enough home medicine books in circulation already. The author has hardly gauged correctly the educational needs of the nurse or he would not have included a bacteriological account of venereal disease. An elaborate classification of insanity, including Kraepelin's four varieties of dementia præcox, is also sadly beside the mark. The book contains some excellent pictures, but certain of them, notably that of a case of pathological obesity opposite p. 134, are quite unnecessary. Much, however, can be said on the other side. Such chapters as those on typhoid fever, pneumonia, and acute rheumatism are excellently done from the point of view of nursing, more especially the second of these. A chapter with the quaint heading "Two Popular Disorders, Catarrh and Asthma," contains a useful explanation of the former loosely employed term. The chapter on surgical nursing is commendably short. Practice, and practice alone, makes for efficiency in that branch of work. The medical information in the book appears to be sound except for the remark that as long as a patient suffering from Addison's disease takes adrenalin extract "he gets on well," which is surely an over-optimistic statement. The book concludes with an elaborate list of abbreviations used in medicine. We trust that nowadays no nurse requires the knowledge of such mysteries, for her instructions should always be written in plain English. One specimen of the present collection is entirely new to us, and in any case would appear to be only of interest to the druggist's errand boy. It runs, "N. tr. s. num.—*Ne tradas sine nummo.* Do not deliver unless paid."

Detection of Common Food Adulterants. By EDWIN M. BRUCE. London: Archibald Constable and Co., Limited. 1907. Pp. 84. Price 5*s.* net.—The compilation of this book is the outcome of recent agitation of the pure food question throughout the United States. We have no doubt that the series of qualitative tests given will be useful to those who have not made an exhaustive study of analytical chemistry. To the practising analyst the book will be of little value. The tests described, so far as we have examined them, are trustworthy, but some of them might easily go wrong in inexperienced hands. To do the author justice, he refers the reader who may wish to go further into the subject to the admittedly standard works on food adulteration and analyses. There is no reference in the chapter on beverages to malt liquors or spirituous drinks.

Atlas of Typical Operations in Surgery. By Dr. Ph. BOCKENHEIMER and Dr. FRITZ FROHSE. Adapted English version by J. HOWELL EVANS, M.A., M.B., M.Ch. Oxon., F.R.C.S. Eng., Demonstrator of Operative Surgery at St. George's Hospital, London, &c. London and New York: Rebman, Limited. 1906. Plates lx. and pp. 250.—The book descriptions of operations are often hardly intelligible to

students and any attempt to assist them in understanding operations is well deserving of approval. This work is the English version of a work published in Germany in 1905; it consists of accounts of a number of the more important operations, illustrated by almost life-sized coloured plates, which show very clearly the structures concerned in each operation and the methods adopted. The utility of the book is greatly enlarged by plates showing the instruments employed in the operation. Some of the operations illustrated are tracheotomy, craniotomy, radical cure of inguinal hernia, ligature of the lingual artery, excision of the tongue, gastrostomy, gastro-enterostomy, and thyroidectomy. Many operations are of course omitted, but those which are given are well described and excellently illustrated, and the book will serve to give clear ideas on obscure subjects. For instance, many students find much difficulty in understanding the operation of gastro-enterostomy, but here it is clearly shown and should be readily understood by all. The English rendering is well carried out.

A Manual of Diseases of the Eye. By CHARLES H. MAY, M.D., New York, and CLAUD WORTH, F.R.C.S. Eng., Assistant Surgeon, Royal London Ophthalmic Hospital, Moorfields. Second edition. London: Baillière, Tindall, and Cox. 1908. Pp. 400. Price 10*s.* 6*d.* net.—The second edition of this manual differs little from the first which we have already reviewed. Some passages have been transposed and a few new ones introduced. The illustration of excision of the lacrymal sac to which we took exception has been replaced by one less open to criticism. A paragraph has been inserted on the Morax-Axenfeld diplo-bacillus, removing the ambiguity which previously existed, though no stress is laid upon the peculiar distribution of the congestion of the conjunctiva and lid margins in the conjunctivitis arising from infection with this organism. The book therefore remains the same in all essentials—a good introduction to the subject but one which admits of considerable improvement.

Public Health Laboratory Work. By HENRY R. KENWOOD, M.B. Edin., D.P.H., F.C.S., with a Part Dealing with Public Health Bacteriological Work contributed by W. G. SAVAGE, M.D., B.Sc. Lond., D.P.H. Fourth edition. With illustrations. London: H. K. Lewis. 1908. Pp. 468. Price 10*s.* net.—Our appreciation of this work in notices of previous editions has been justified by events. We still think the book one of the best for the requirements of the student of public health, and more particularly as a guide on practical issues. He can read and adopt with confidence the methods outlined for the examination of water, sewage, air, food, and so forth. The section on food is necessarily short but it is sufficient for imparting a good general knowledge. The chapter on spirits, though brief, is instructive and to the point and shows that more attention than has hitherto been the case is being given to those constituents of spirits which differentiate patent-still from pot-still spirit. The sections dealing with bacteriological work in regard to questions of public health are contributed by Dr. Savage. These are also written in a way calculated to be of distinct service to the student in the public health laboratory. On the whole, we do not know of a better guide to the kind of laboratory work which has been called into being and demanded by modern methods of public health administration.

THE ST. PANCRAS SCHOOL FOR MOTHERS.—We have been asked to say that Mr. H. B. Irving and Miss Dorothea Baird have promised to give a matinée during their autumn season at the Shaftesbury Theatre in aid of the Mothers' and Babies' Welcome, an institution for helping and feeding nursing mothers in Somers Town St. Pancras.

REPORT OF THE ROYAL COMMISSION ON THE CARE AND CONTROL OF THE FEEBLE-MINDED.

III.[1]

ON the establishment of the Commission in Lunacy in 1845 the number of paid Commissioners was, as it is now, six. At that time visits had to be paid to 25,000 lunatics. On Jan. 1st, 1906, the number of lunatics to be visited had risen to 116,361. Much evidence has come before the Royal Commission indicating, as might have been expected, that it has become impossible for the Commissioners in Lunacy to perform efficiently the duties assigned to them. One of them said: "The Commissioners are satisfied that they can no longer continue to discharge those duties in as complete a manner as they have hitherto endeavoured to discharge them unless they are strengthened by an addition to their number. ..... As it is, their duties have to be discharged so hurriedly as to be good for neither the work nor the workers." So also Dr. G. H. Savage in his evidence said: "I may say the visitation by Commissioners, when they talk of being able to see 800 patients in a day, although a large proportion are weak-minded, must mean very imperfect visitation."

Parallel with, and in some respects overlapping, the jurisdiction of the Commissioners in Lunacy is the authority exercised by the judges of the Supreme Court. The department which has to do with the work of this jurisdiction consists of Masters and Visitors, and its cost formed for the year ending March 31st, 1906, a grand total of £19,805. The number of patients with whom it has to do is 3782. On the other hand, the cost of the Commission in Lunacy for the year 1904–05 was £14,752 and the number of patients visited was 116,361. On the one hand is a jurisdiction of ancient origin, based on the prerogative of the Crown and protecting the few individuals of unsound mind who are possessed of property. On the other hand is the Commission in Lunacy established by statute for the purpose of preventing abuses and protecting the persons of lunatics irrespectively of property qualification. The work of the former body is at least not excessive, while the work of the latter is so excessive that it cannot be efficiently performed. It has therefore appeared to the Royal Commission advisable to consider whether an amalgamation of the two bodies would be expedient. The evidence disclosed a divergence of opinion between the Commission in Lunacy and the judicial authority as represented by the Masters in Lunacy and the Chancery Visitors. The Commissioners in Lunacy were of opinion that an amalgamation was necessary, while the Masters and the Visitors were strenuously of opinion that their isolated position should remain unimpaired. This latter view seems in part founded upon the dissimilarity of the constitution and work of the two bodies and in part upon the likelihood that the Chancery work would be performed less efficiently after the amalgamation and the work of the Commission in Lunacy not appreciably better performed. At present the Masters and Visitors have a considerable amount of work for which there is a sufficiency of workers, while the Commissioners have an excessive amount of work with a striking deficiency in the number of workers. As a result of its deliberations upon this part of the subject the Royal Commission has made certain recommendations for the immediate betterment of the administration. In the first place it is recommended that the Lord Chancellor should, acting under the Lunacy Act of 1890, amalgamate the office, duties, and staff of the Chancery Visitors with the office, duties, and staff of the Commissioners in Lunacy, that under the same Act he should appoint two additional medical Commissioners, and that by the immediate appointment of honorary Commissioners he should fill up the vacancies on the Board of the Commission in Lunacy.

How to provide for chronic and harmless patients otherwise than in asylums is a question to which the Royal Commission has paid considerable attention. Four alternatives presented themselves: 1. To build separate "intermediate" or "workhouse" hospitals, which would be fitted for the reception of senile dements and which might be of cheaper

[1] Nos. I. and II. were published in THE LANCET of Sept. 19th (p. 890) and 26th (p. 959), 1908, respectively.

construction and less expensive to work than the county asylums as they are at present. 2. To settle suitable patients in family colonies or in cottages and small buildings in connexion with some central organisation formed for the care of mentally defective persons. The Royal Commission has examined the system provided at Dun-sur-Auron in France and that obtaining at Gheel near Antwerp, where accommodation is provided for patients in the neighbourhood of an asylum, and it has come to the conclusion that a system of family care or guardianship adopted with well-defined sanitary and medical safeguards is well worthy of consideration and might with advantage be adopted in this country. 3. To board out the mentally feeble of this class as is done in the "family guardianship" system which obtains in Scotland. It appears that in that country this method, though of recent establishment, works smoothly and satisfactorily and has been adopted in certain parts as a form of industry. 4. To place patients in large farm colonies on the lines of certain colonies established in the United States and in Canada. Quite extraordinary results appear to be produced in these farm colonies by men whose lives are devoted to the care of the mentally defective, results which may throw light even on the methods of education of normal scholars in public elementary schools. The last alternative whereby the patients would be returned to the workhouses is rejected summarily and it is laid down that the workhouses should cease to be asylums for lunatics. It is interesting while considering the cost of these various schemes to quote the evidence of Mr. Clare, the clerk to the Lancashire Asylums Board: "I should not like to commit myself to any figures, because one sees the variation in the cost of asylums recently built; there is only one thing that seems invariable—namely, an increase in cost as time goes on, largely owing, of course, to the increased cost of wages and material, and partly to carrying out the latest scientific ideas, or philanthropic ideas, for dealing with pauper lunatics, without any evidence really to show that the increased expenditure has benefited lunacy; in fact, as far as I can see, all the expenditure during the last 20 years on lunacy has not been any benefit to lunatics. I will not say it has done any harm, but there has been no substantial benefit derived." Even if this is only in part true, it is plain that some method of dealing with the pauper lunatic without incurring a large initial expenditure is well worth consideration.

To house the hopelessly insane in such a way that they may be efficiently and economically looked after forms an important part of the problem set before the Commission, but another equally important part is that which is concerned with persons commencing to be mentally ill. It has been widely recognised as an undoubted hardship that the patient who is at the commencement of his illness should forthwith be certified as a lunatic. The consequences to the individual's career are often disastrous as a direct result of this procedure and a stigma forthwith attaches to him which may render him unemployable in his occupation. It is to this unfortunate state of things that we must to a large extent attribute the too frequent postponement of treatment, so important in an early stage, to the day when the patient is hopelessly ill and his chances of recovery are enormously reduced. Certain methods of meeting the difficulty were suggested to the Commission. The first is the establishment of "observation" or "reception" houses or wards where a patient who is suffering from any form of mental disorder may be admitted freely and at once with a view to his being treated at an early stage of his disorder and without certification. We have before commented in these columns on the excellent results obtained in certain institutions of this character in Scotland and we believe the possible establishment of similar institutions in this country to be the fondest hope of those practising psychological medicine. The observation wards of the Eastern District Hospital of Glasgow were opened in June, 1904, and since then large numbers of patients suffering from various kinds of mental disorder have been treated there. Of these no less than 61 per cent. were discharged either cured or relieved. It is no wonder that there is a general consensus of opinion in favour of the utility of these wards. The change, as the Commission points out, marks a further step towards the substitution of the hospital for the asylum. The procedure for entering the wards is simple and merely involves the production of a medical certificate to the effect that it is desirable that the patient should be observed and treated. It is not a certificate of detention. The method permits of a more scientific handling of the problems of mental defect than is at present possible and allows of the disease being combated at the earliest possible moment. Dr. F. S. Toogood, the medical officer of the Lewisham Infirmary, brought before the Commission an interesting account of a similar method of dealing with cases of mental illness adopted by him at Lewisham. The relieving officer conveys the patient to the workhouse or to the infirmary, either upon his own authority or upon the direction of a justice of the peace after a medical examination, and the patient is there detained until fit to be discharged or sufficiently confirmed in his illness to be sent to the county asylum. In Dr. Toogood's words, "The great majority of cases treated in these wards, although temporarily insane and requiring control and observation, are not asylum cases." The disease is dealt with apart from the "stigma of lunacy," for "friends do not object to the detention in infirmaries or workhouses but they have a very keen horror of an asylum." The Royal Commission reaches the conclusion that by arrangement between the Board of Control and the local authority there should be reception wards or houses wherever they may be necessary and that whatever legal provision is required for their establishment should be made without delay. It is not thought necessary that large and expensive buildings should be erected but that separate wards in workhouses or in general hospitals might be used under contract. The report points out the special advantages of these wards for the clinical study of mental disease and the probability that the hospitals, especially those to which medical schools were attached, would be glad to provide them on their own premises.

The report is favourable to a procedure which is borrowed from Scotland and which is applicable as a temporary measure to "unconfirmed cases." The certifying medical attendant declares that his patient is afflicted with a certain disease and that with a view to his recovery it is desirable that he should be placed in such and such place for a temporary residence, the term not exceeding six months. It is not necessary to put in the certificate anything indicating that the illness is mental, but it is usual to put in some reference to mental or nervous disturbance. It is proposed that if this procedure is adopted in this country the Board of Control shall be required to undertake the registration, supervision, and inspection of all houses in which two or more mentally defective persons are maintained for private profit.

With regard to certification the most important recommendations of the Commission are, first, that the word "lunatic" should be replaced by "mentally defective person" and the word "pauper" eliminated; secondly, that the local committee may present a petition, as next friend, where it thinks that such a petition should be presented, either at the request of the friends or when the friends have failed to act; and thirdly, that the judicial authority may select a suitable institution or house or leave the selection to the committee in cases where the friends have failed to act.

The report, besides the chapters which we have attempted to summarise, contains others bearing upon the causation of mental defect, upon finance in connexion with the new schemes, upon epileptics, and finally, special chapters upon the conditions of the mentally defective in Scotland and Ireland. The whole report is replete with the most interesting and valuable information as well as with the reasoned conclusions of a body of men eminently fitted to grapple with the serious problems presented for their consideration. We earnestly hope that the report may not follow many of its forerunners to that limbo of forgetfulness where lie unused so much priceless information and knowledge bred of unique experience.

ST. MARY'S HOSPITAL MEDICAL SCHOOL (UNIVERSITY OF LONDON).—Award of entrance scholarships, 1908. Open scholarships in natural science: £145, B. W. Armstrong, Boston Grammar School; 75 guineas, F. P. Bennett, University College, Cardiff; 50 guineas, J. R. M. Whigham, Westminster City School; 50 guineas, F. C. Robbs, Clarence College, Gravesend. University scholarships: 60 guineas, A. W. Bourne, B.A., Downing College, Cambridge; 60 guineas, W. A. Berry, Queen's College, Belfast. Epsom College scholar: E. P. Langley.

THE LANCET.

LONDON: SATURDAY, OCTOBER 3, 1908.

There is No Decay.

WE have before us a reprint of a lecture with this title delivered under the auspices of the Independent Lecture Society of Liverpool in the early part of this year and now published[1] at a popular price. We commend its perusal to medical men because the rapid evolution that is taking place in our science makes due appraisement both of our workers and our theorists very difficult, and the lecturer has many shrewd and humorous things to say upon this situation. Not infrequently we read indiscriminate praise of the heroes of to-day, while in other quarters we may find that it is the old masters who are especially praised, and unfortunately this is easiest done by belittling the period in which we live. It is especially against this latter form of criticism that the lecture is delivered, and the tendency to decry the great men of to-day is found in our profession perhaps as much as in other callings. The habit of detracting from contemporary performances, indeed, is not an uncommon one. It is not confined to those whose duty or pleasure it is to publish their views upon literature, art, science, philosophy, or religion, but it prompts the utterance in private circles of opinions held by persons who are scrupulous in other matters to accord to every man his due, and who would be keenly distressed to realise that they were denying justice in their ill-considered judgments. It is chiefly, according to our experience, in conversation that medical men appear to hold their leaders of to-day cheaply; public references to them in literature are usually much more generous. In the words of Mr. Ross, "An overweening modesty in us seems to persuade us that it is quite impossible we should be fortunate enough to be the contemporaries of great men," and he attacks this particular phase of pessimism by showing that it has been manifested in all ages and countries, and against many to whom the mature judgment of succeeding generations has accorded undying fame. The very persons who are used to bring the modern celebrity into his right and modest place, in their turn, when they were modern, were subjected to analogous treatment. A lecturer in discussing this situation would naturally find his most striking instances of misleading criticism in opinions upon literature and art, which though delivered by the pundits of their day have since been proved absurd, but Mr. Ross's words, as he himself perceived, also have their meaning for a scientific audience.

In literature and in art the need for special training, for knowledge, and for judicial qualities on the part of the critic is not recognised by the general public, and criticism is often accepted as sound and as evincing special discernment and acumen, merely because it voices the uneducated opinion of the average individual. The same does not quite hold good in science. The average individual himself, because he can see a picture so far as his eyes are concerned, and can read a romance or a poem so far as education in reading is concerned, believes himself qualified to pronounce upon it, and if he does not praise or condemn it in the public press or on the public platform he has no hesitation in according his meed of approval or disapproval to the utterances of those who do. The public press, in such matters at all events, is tempted by the line of least resistance, and the critic not too learned and not of too original a bent of mind is likely to find a smoother path before him than he who preaches to a limited but discerning audience in the wilderness. In science and in philosophy it is somewhat different, for so far as public or lay opinion is concerned the smatterer who cannot go to original sources and study for himself at first hand has to take his opinions from reviewers or critics who, in order to lay what is wanted before a special audience, must be themselves well trained. All great men of science have not, of course, experienced the pleasure of seeing their discoveries appreciated by their contemporaries, but the judgments, whether favourable or the reverse, have generally come from competent persons. In these circumstances Mr. Ross finds examples of the want of appreciation accorded to art and literature by contemporary critics more frequent and more obvious than any similar mistakes made with regard to scientific performance. He instances the records of contemporary opinion denouncing the drama of EURIPEDES; he lays before us the opinion of GRAY that England made no advances in painting and sculpture, so that the poet wrote of these arts to a correspondent in 1763: "You are generous enough to wish, and sanguine enough to see, that art shall one day flourish in England: I, too, much wish but can hardly extend my hopes so far"; and he calls to our minds the reception accorded to such men as WORDSWORTH, COLERIDGE, BYRON, KEATS, SHELLEY, SWINBURNE, and ROSSETTI. He also emphasises the point in the passages which give the title to his lecture that even in periods in which posterity claims to find decay in a particular branch of intellectual development there has been no decay of intellect but a progressive development of it in fresh directions, due possibly to causes connected with the progress of public events, or perhaps to reasons less easily traced and assigned.

Admitting that the scope of his discourse is, strictly speaking, limited to literature and art, and disclaiming the right to speak with authority of science, Mr. Ross here uses the progress of medicine in happy illustration of his theme. "Let us take medicine," he says. "Medicine is primarily based upon the study of anatomy or structure, of physiology, or the scheme of structure carried out in life, and of botany and chemistry as representing the vegetable and mineral worlds where the remedies are sought. Anatomy soon reaches a finite position when a sufficient number of careful dissections have been made; the other divisions used

[1] There is No Decay: a lecture delivered by Robert Ross in the Old Bluecoat School, Liverpool, on Feb. 12th, 1908. Liverpool: The Northern Publishing Company, Limited. Pp. 38. Price 1s.

to look like promising endless developments but there is reason to suppose that they too, as far as medicine is concerned, have reached a sterile perfection. The microscope is perfected up to a point which mechanicians think cannot be improved upon, so that those ultimate elements of physiology which depend upon the observation of minute structure are known to us." He proceeds to say that he will not labour the point by applying it to botany or to chemistry where he perceives that the finality of our work is by no means clear, but he suggests that the result of a feeling that not much more is to be got from minute observation with the tools at the disposal of the medical man has been the shunting of the brightest intellects and most inventive work into more imaginative channels. "There are no men," he says, "who guess so brilliantly as men of science, so that science in that respect has attained the dignity of theology. ..... But the human intellect, especially if it is scientific, cannot, I imagine, like an actor, go on repeating or feigning the same emotion. ..... The tree of knowledge is an evergreen, and in science no more than in arts is there any decay."

Such suggestive criticism of the position of modern medicine is welcome, whether we agree with it *in toto* or find in the propositions of the lecturer, tinged as they are with irony and expressed in frequent paradox, material for dissent. Mr. ROSS is careful to warn us against the danger of according exaggerated praise to the unworthy in the desire to acclaim merit, and he does so in terms which may be quoted as containing a suggestion of the aims to which modern medicine should be directed. "I do not ask you," he says, "to adopt the habit against which MATTHEW ARNOLD directed one of his witty essays, the habit of expressing a too unctuous satisfaction with the age and time in which we are living. There are problems of poverty, injustice, disease, and unhappiness which should make the most prosperous and most selfish of us chafe; but I do urge that we should not suspect the art and literature of our time, the intellectual manifestations of our age, whether scientific or literary." In the practical application of medical science the resolution of some of those problems may be found; and the present time is the opportunity of the man of science and of those in sympathy with him to make their mark and to prove that this is an age not of decay but of progress; while it is in resistance to such progress that the carping spirit which claims to detect decay in all modern development will most openly show itself. Intelligent appreciation must ever be based upon knowledge of the thing criticised, upon some sympathetic insight into the aims and motives of the worker, and must be guided resolutely in accordance with the principles of truth. When the hymner exclaimed, "Change and decay in all around I see," he was in a frankly despondent mood. Those who feel like him may take heart from the fact that change and decay are not synonymous terms. Cessation of effort may occur in one place, but if it is replaced by activity of the finest sort in another the net result will be progress and not decay. And this is Mr. ROSS's message, and we congratulate him upon the humour and knowledge with which it is delivered.

Report on the General Prisons Board for Ireland, 1907-08.

WITHIN the last few days we have received from the Irish Stationery Office two Blue-books which are of more than ordinary importance. To the first of these—the report of the Registrar-General of Ireland for last year—we devoted an article in THE LANCET of Sept. 26th (p. 946). The second Blue-book embodies the report of the Commissioners of the General Prisons Board for Ireland; and inasmuch as it contains matter of considerable medical interest we proceed to notice it briefly on the present occasion.

Passing over the merely statistical portion of the document as of mainly local interest, we observe that the Commissioners devote particular attention to reformatory work among the juvenile offenders of Ireland. The "Borstal" system is in operation at several of the prisons in Ireland, and respecting the good effects of this system the Commissioners report in terms of high appreciation. From a full description of the system in the report we summarise the following particulars. Under the Borstal system all boys, immediately on committal, are strictly isolated from contact with the ordinary adult prisoners. They are fed on generous diet and special attention is paid to every detail of their health and education. They are employed during specified hours in learning useful trades and in times of recreation they are carefully looked after by the chaplains and other officials. On their discharge from prison the "Borstal" boys invariably appear improved in physique and they are certainly better mannered than on their committal. In fact, in the words of the Commissioners, "While undergoing their term of punishment every inducement is held out to them to keep away from vicious habits in future and the results are most encouraging." The principal drawback to the success of the "Borstal" system appears to be the shortness of the sentences inflicted on many of the "juvenile-adults," which in the case of a large proportion of the lads sent to Clonmel last year were for the minimum period of nine months. This drawback, however, will to some extent be remedied in the event of the passing of the Prevention of Crime Bill now before Parliament, one year being the minimum period of detention proposed by that measure in Borstal institutions. The Prevention of Crime Bill is intended to deal with two classes of offenders who occupy the extremes of the present prison population—namely, the young offender and the habitual criminal. The Bill provides in both these classes for the compulsory detention of the offender—in the first class with a view to his reformation and reclamation; and in the second class, for the protection of the public, the mode of incarceration in the latter case being known as "preventive detention."

The health of the prisoners throughout Ireland is stated in the report to have been very good. Commenting on the fact that of the three divisions of the United Kingdom Ireland has now the largest proportion of tuberculosis amongst its general population, the Commissioners remark that the amount of this disease in the Irish prisons is very small, as compared either with prisons in other countries or with the general population of Ireland, although so many prisoners

come from a class of persons who lead reckless, intemperate, and poverty-stricken lives. Contrary to the general opinion, the Commissioners believe that prison life as it exists in Ireland does not in any way promote the development of tuberculous disease. That life consists of open-air employment, good and sufficient food, perfect cleanliness, and general hygienic conditions by night as well as by day, together with properly regulated association at labour and during exercise. The majority of prisoners are occupied for the greater part of the day in manual labour in the open air. Two of the chief employments—stone-breaking and firewood making—are entirely open-air work, and a considerable area of land is attached to most of the Irish prisons, on which many of the prisoners are employed in gardening. The classes working in association at bag-making and mat-making have the advantage either of constant open-air life or of well-ventilated workshops. The prison cells are in all cases well ventilated and well lighted, and are kept thoroughly clean. Smoking is allowed to a portion only of the prisoners, and to these only during the hours of exercise, so that there is less temptation to spit than in outside life—one dangerous source of infection is thus removed. The medical officers exercise great care in the treatment of individual prisoners, and they are authorised to prescribe for prisoners in cells, as well as for patients in hospital, such alterations in diet and exercise as to them seem necessary on medical grounds. To most of the prisoners this change in the conditions of life is definitely beneficial. As drinking to excess is the cause of most of the minor offences in Ireland, it will readily be understood that many of the prisoners on committal present the appearance of having been ill-fed as well as ill-clad, and of having been exposed to cold and wet and to the hardships of a badly regulated life. Many of them also are obviously the victims of intemperance. For such the shelter of prison, with its wholesome food, equable temperature, and healthy occupation, constitutes a veritable sanatorium. It is mentioned in the report that fresh milk enters largely into the composition of prison dietary, each prisoner consuming on the average a pint daily. In these circumstances, we are not surprised to learn that under the *régime* provided for them the prisoners of Ireland are improved in every way and that on their discharge they weigh more than on their committal to prison. Very complete statistics of disease and mortality among Irish prisoners are contained in the report and from these we gather that they enjoy remarkably good health. It appears to us that these institutions, under the admirable management of the Prisons Board, will prove a valuable asset in the crusade against tuberculosis now going on in Ireland.

Syphilis in Uganda.

WE have received from Colonel F. J. LAMBKIN, of the Royal Army Medical Corps, under the title of "Syphilis in the Uganda Protectorate," a paper read by him before the United Services Medical Society, and containing the most ghastly account of the ravages of the disease which has appeared since the first publication of the history of the siege of Naples in the fifteenth century. Notwithstanding the terrible consequences of sleeping sickness in the Protectorate Colonel LAMBKIN is inclined to regard syphilis as a still greater evil, possibly because the trypanosome kills its victims, while the spirochæta of syphilis leaves them to transmit the consequences of their malady to future generations, and thus to lay the foundations of racial degeneracy or extinction. He tells us that while the opening up of Africa from the west has been responsible for the introduction of sleeping sickness, the opening up from the east has been the main cause of the visitation of syphilis. It is not that the disease was previously unknown, for there is evidence of its occasional presence for many years, and it is supposed to have been introduced originally about 1850, during the Arab invasion, but it existed only to a small extent. About 12 years ago there was a more or less sudden outbreak among the Baganda tribe who are the predominating inhabitants and who are described as of mixed negro type, sturdy in physique, extraordinarily intelligent, willing, hard-working, and on the whole honest. Colonel LAMBKIN quotes from Sir HARRY JOHNSTON a description of them as "the Japanese of the dark continent, the most naturally civilised, charming, kind, tactful, and courteous of black people." Since the introduction of syphilis among them it has gone on increasing, both numerically and in virulence, until at the present time more than half the population of the Protectorate is infected. In some districts it is estimated that 90 per cent. suffer; the infant mortality which it produces is as high as 50 or 60 per cent., and it is the chief cause of the sterility which exists throughout the country. As things are at present, the entire population is in danger of being exterminated by syphilis in a very few years, or of being left a degenerate race fit for nothing. To complete the picture of the magnitude of the evil we are told that the Protectorate has an area of 130,000 square miles, and a population of 3,000,000, while the population of Uganda proper is about 1,000,000, of whom 100,000 are said to be Christians.

Colonel LAMBKIN describes the type of the disease as being that which is usual when it is implanted on virgin soil and allowed to run riot without treatment. It resembles the late Sir WILLIAM FERGUSSON'S description of what he saw in like circumstances in Portugal in 1813—namely, mutilation everywhere. He said then of Lisbon that more cases of mutilation from syphilis could be seen in that city in one day than could be found anywhere else in a year. Under analogous conditions the disease has assumed its well-known characteristic virulence. In the primary form the true Hunterian chancre is the rule, and this often takes on a phagedænic character and produces wide destruction of surrounding parts. The second stage is characterised by intense and confluent eruptions, ulcerations of the mucous membranes, laryngitis, iritis, periostitis, affections of the joints, profound anæmia, cachexia, and general disturbances of nutrition. In some cases the principal secondary manifestations are of a nervous kind, as exemplified by neuralgic pains, asthenia, paralysis, and analgesia. The tertiary stage is represented by early rupial syphilides which extend rapidly and deeply over the body and limbs; osteo-arthritic manifestations, with severe

nocturnal pains, periostitis, and necrosis of the femur, tibia, clavicle, and bones of the forearms; and the joints become distended with fluid and sometimes ankylosed. Gummatous ulceration destroys the eyelids, nose, and ears, producing innumerable varieties of mutilation which may be witnessed every day; and the amount of inherited syphilis is enormous. In every part of the country there are constantly met boys and girls between eight and ten years of age who are thus affected, frequently with osteo-arthritis of both knees. Caries of the bones of the face and of the base of the skull is common, and also blindness due to interstitial keratitis. With regard to the effect on childbirth and infant mortality Colonel LAMBKIN quotes from Dr. C. A. COOK, C.M.S., the calculation that 75 per cent. of the pregnancies of the Uganda women end in abortion or miscarriage, premature labour or stillbirth, or in the death of the infant during the first week after delivery. Parasyphilitic affections are not very common and Colonel LAMBKIN assumes that the disease has not existed in the country for a sufficient length of time to produce any abundance of them. Still, a certain number of tabetic cases have fallen under his observation and "quite a number" of young men with syphilitic histories who were suffering from complete loss of sexual power.

With regard to the causes of the epidemic—for so, indeed, it may be called—Colonel LAMBKIN gives the first place to the supersession by Christianity of the tribal laws and customs which formerly prevailed, under which the liberties of women were greatly restricted and unchastity was severely punished. Christian teachers have brought about the abandonment of polygamy and of a control over female liberty which was formerly exerted, and under which immorality and promiscuous intercourse did not exist. Corresponding with the time of the outbreak of syphilis, the chiefs of the Baganda tribe, the majority of whom had become Christians, decided to remove all such restrictions, as being contrary to Christian teaching, and to set the women free. This was done, and the women were left at liberty to roam about and to do as they liked, with the result of establishing a system of promiscuous sexual intercourse and immorality. The freedom enjoyed by women in civilised countries has gradually been won by them as one of the results of centuries of civilisation, during which they have been educated; and women whose female ancestors had for countless generations been kept under surveillance were not fit to be treated in a similar manner. They were, in effect, merely female animals with strong passions, to whom unrestricted opportunities for gratifying these passions were suddenly afforded. The opinion thus stated is confirmed, it is satisfactory to observe, by competent witnesses who are themselves Christian teachers; and Colonel LAMBKIN cites the testimony of the Rev. J. ROSCOE of the Church Missionary Society, Chief of the Theological College at Kampala, and that of the Very Rev. Père LAANE, Superior of the White Fathers at Entebbe, whose labours for the relief of the sufferers from sleeping sickness have lately called forth a warm eulogium from Mr. HESKETH BELL, the Governor of Uganda. As a second cause the abolition of the punishments formerly inflicted upon offenders against chastity is mentioned and is said to have encouraged the commission of such offences, and thus to have lent itself to the propagation of syphilis amongst the people. Colonel LAMBKIN concludes his paper by a sketch of an organisation which he has established, with the aid of the local chiefs, for the cure of persons suffering from syphilis, and under which treatment rooms will be opened in various localities, while a sufficient regularity of attendance on the part of the patients will be secured through the agency of these chiefs and of the control which they still exert over their people. Colonel LAMBKIN found a prevalent opinion among medical men in the Protectorate that the natives were bad subjects for the administration of mercury, but this view has not been sustained by his own experience and he advises its free administration under ordinary precautions. In conclusion, he believes that it is possible to count upon even more complete control over the patients in Uganda than in India, the influence of the chief over his people being remarkable and his word being law, and that hence there is every reason to think, without being too optimistic, that our chances of being able to deal successfully with syphilis in Uganda are at least as good as they were ten years ago in India. If we can bring about anything like the brilliant results achieved in that country we shall, he says, have much cause for congratulation.

Annotations.

"Ne quid nimis."

THE NOTIFICATION OF PULMONARY TUBERCULOSIS.

A COMPARATIVELY open secret was disclosed at the International Congress on Tuberculosis at Washington by Dr. A. Newsholme, principal medical officer of the Local Government Board. Dr. Newsholme, speaking on the authority of Mr. Burns, the President of the Local Government Board, made the expected announcement that the Board proposed to put upon Poor-law medical officers the duty of notifying, to all sanitary authorities who requested the information, all cases of pulmonary tuberculosis occurring among patients who are a charge to the parish. Such an order, to be of any use, will also make it compulsory upon the guardians and their staff to notify changes of address of parochial patients suffering from pulmonary tuberculosis, and no doubt the details of such notification will be arranged. It seems to us that a good deal of care will have to be exercised in this latter direction lest anything that looks like the unnecessary segregation of a class should lead to concealment of a certain number of exactly the kind of cases that ought to be under active treatment.

AN EXPERIMENT IN CONTRACT PRACTICE.

THE medical men in the town and suburbs of Bellinzona, who have been making what we should think a somewhat bold experiment in contract practice on extensive lines, have soon discovered to their cost what an inordinate amount of unnecessary trouble thoughtless people manage to give when they only have to pay a fixed sum—usually a very small one—per annum. An arrangement was made whereby the locality was divided into districts, the inhabitants paying a small rate to the local municipal authority, out of which the medical men received from £120 to

£200 per annum. Such an inordinate amount of attendance—day and night—was called for that they found it impossible to give it. They have now refused to continue the arrangement, offering, however, to attend all who cannot afford to pay anything for a fixed stipend of £50 per annum, other people to be charged according to their financial position from 6*d.* to 5*s.* an ordinary visit and more for night visits. It is very doubtful if these by no means exorbitant terms will commend themselves to the good people of Bellinzona after they have been accustomed to knock up a medical man at all hours of the day and night without any thought of extra expense to themselves.

A THEORY AND A CRITICISM.

WE publish on p. 1051 a letter from Mr. G. Sherman Bigg which purports to be a criticism of the views generally current of the causal relation of bacteria to disease and offers as a theory the view that bacteria develop in disease after the diseased condition has been engendered by some other agency, and that so far from being the cause of disease bacteria are "Nature's remedy to cure" it. Mr. Sherman Bigg supports his views by a chain of reasoning which is palpably defective, and makes statements which are demonstrably incorrect deductions from observed facts. He begins his letter by the statement that diversity of opinion inevitably tends to the advancement of science, which is in itself an *obiter dictum* which is open to question. It would be more correct to say that thoughtful criticism or difference of opinion, backed by carefully considered evidence, tends towards the advancement of science. He next states that "in many instances the presence of bacteria has been considered the sole proof of the existence of a specified disease." This again is an incomplete and an incorrect statement, since it is only when they conform to certain well-recognised critical conditions—the well-known criteria of Koch—that they are recognised as the causal agents in a given disease. It is precisely these conditions that the opponents of the bacterial origin of infective diseases, who are, by the way, usually out of touch with laboratory methods, lose sight of. It is well recognised that bacteria, even pathogenic bacteria, may be present in an animal organism without actually producing disease, since questions of dose, of virulence, and of resisting power of the host are all concerned, and what people are prone to do in this connexion in concentrating attention upon one factor in a complex process the result of the coincident action of several agencies is to lose sight of, or to ignore, the others. Mr. Sherman Bigg then makes the assertion that "bacteria do not exist in the early stage of disease." The only evidence offered in support of this statement is that bacteriological investigation sometimes fails to establish the specific nature of the disease in some cases until the diagnosis is established by other means. The further assumption is then made, that since pathogenic bacteria "are constantly being inhaled or swallowed without producing any evil result," bacteria cannot flourish in a healthy subject and can only develop in diseased surroundings, and that therefore bacteria are beneficent agents combating the morbid processes. This assumption ignores all the interesting observations which have been made regarding the action of pathogenic bacteria, the isolation of toxins from them, the genesis of disease in animals by inoculation of pure cultures, and indeed the whole of the carefully devised experiments which have resulted in such great advance in our methods of recognising, treating, and preventing infective diseases. We draw attention to Mr. Sherman Bigg's letter, because a similar attitude of mind towards bacteriology and its achievements is not so very uncommon. In spite of the great advances made by the science in the comparatively short space of time which has elapsed since its inception, it should be remembered that it is yet in its infancy, and instead of casting doubt upon its fundamental relation to the pathology of infective diseases, because in certain cases the methods so far evolved as regards diagnosis and treatment may be disappointing, it is better to wait for improvements in these and meanwhile to utilise the undoubted advantages which it has afforded us, and in any case to avoid disparaging those advantages without a careful and critical examination of all the material available.

THE PRESENT PANDEMIC OF PLAGUE.

A VALUABLE report has just been drawn up by Assistant Surgeon-General J. M. Eager, of the Public Health and Marine Hospital Service of the United States, and issued in the form of a pamphlet of 30 pages by the United States Treasury Department, tracing the lines of march taken by bubonic plague during the past 14 years. The revival of plague dates from the year 1894, when it escaped from the remote endemic focus of the disease in the province of Yunnan, China, eventually reaching numerous countries in all quarters of the globe, and in many instances becoming established in defiance of most carefully planned preventive measures. It first reached Canton and then began a series of ramifications that have since become world-wide. All classes among the native population suffered and rats were observed to be affected. In the year 1896 the attention of sanitarians was focussed on the threatening epidemic by the menacing appearance of the disease in Bombay. Although the source of this outbreak is uncertain it is probable that it was imported from Southern China. Notwithstanding considerable opposition founded on the religious prejudices of the native population active sanitary measures were adopted, but these had to be modified later owing to the civil disturbances provoked by the violation of caste distinctions. In the same year the disease reappeared in Hong-Kong and in Canton and two cases occurred at St. Petersburg. In 1897 the Bombay Presidency suffered from a more severe epidemic, resulting in 55,000 deaths, and the disease was present in the Punjab, at Karachi and Madras, and at the Turkish seaport of Jeddah where it was introduced by pilgrims. In 1898 the number of plague cases and deaths in India as compared with the preceding year was more than doubled, great increases occurring in Bombay, Rajputana, and the Punjab. The Presidency of Madras and the State of Hyderabad were invaded and the disease, extending far from its endemic home, reached Madagascar and Mauritius. The spread of the plague westward by Mussulman pilgrimages led at this time to the improvement of quarantines and the prevention of clandestine pilgrimages. Plague continued to increase in India in 1899, 135,000 deaths being reported, and from Hong-Kong it spread to the Straits Settlements. In Europe it visited Portugal, Russia, and Austria, and in South America it reached Paraguay, Brazil, and Argentina. In the year 1900 the disease was present in every quarter of the world, but it was less prevalent in India than in the previous year. Australia then became a plague centre and has lodged the disease ever since. Several notable extensions of the disease took place in Europe, cases being reported at Oporto, Glasgow, London, Cardiff, and Bremen. In 1901 the disease in India increased threefold, 278,000 deaths being recorded. The further history of plague is largely a chronicle of intra-continental expansion, the disease having become established in every continent. It continued to increase alarmingly in India until 1904, when it caused over 1,000,000 deaths. In the same year it was reported at Aden and in Siam, China, Japan, Uralsk, Egypt, South Africa, Mauritius, New Zealand, Australia, the Philippine Islands, South America, and

California, while Russia was the only European country affected. In 1905 the mortality from plague in India fell a little below 1,000,000. In Asia its distribution was not materially changed. The disease was brought to Liverpool from Rangoon, to Manchester from Buenos Ayres viâ Hamburg and Middlesbrough, and to Leith. In 1906 a great decrease of plague took place in India, only 332,000 deaths resulting, but the following year was marked by a great increase, 1,200,000 deaths being reported. It invaded new territory in Northern Africa, notably in Tunis and in Algeria. The report includes tables, showing the distribution of the disease year by year in countries and in localities, together with a list of vessels on which cases of plague occurred, with the names of the ports of departure and arrival.

THE USE OF PICRIC ACID IN BURNS.

THE specific action of picric acid in the treatment of burns at first led to the belief that an ideal curative agent had been discovered, but it was soon found that when unwisely used it produced serious toxic symptoms. The treatment of burns is highly important because it is necessary to prevent shock as well as to relieve pain. The value of picric acid in this connexion is described by Dr. C. P. Martin in the *International Journal of Surgery* for August. It has been the custom for many years to relieve the pain resulting from burns by administering morphine, but Dr. Martin finds that the severity of the shock may be diminished and the pain relieved by the use of a picric acid dressing without giving morphine. Sterile gauze, soaked in a solution of picric acid containing 60 grains in 16 fluid ounces of sterile water, should be applied directly to the burned surface, covered with rubber tissue and cotton wool, and finally held in position by a bandage. After 48 hours the dressing is renewed unless any infection has occurred, when the surface should be first washed with a solution containing ten grains of potassium permanganate in 32 fluid ounces of sterile water. Then from day to day the dressing is renewed until the surface looks hard and dry, when the dressings are discontinued and the surface is covered with oxide of zinc, leaving the parts fully exposed to the air. One great advantage in the use of picric acid lies in the fact that the first dressing does not need removing for 48 hours, after which time shock need no longer be feared. The dressing absorbs the discharges from the burn and thereby prevents septic absorption. Any dressing which keeps these discharges in contact with the absorbing surface of a burn invites the onset of severe constitutional symptoms. Picric acid is sterile and antiseptic and stimulates the production of new tissue. The yellow stain produced by picric acid may be removed by first washing the hands in weak ammonia water and then bleaching them with a pure solution of hydrogen peroxide, which may be conveniently applied on cotton wool. The staining of the patient's clothing need not occur if the cotton wool be so arranged that it absorbs the discharges as they escape. As to the fear of poisoning, Dr. Martin believes this to be due to the use of too concentrated solutions of picric acid. In regard to oil dressings he points out that oil is neither sterile nor antiseptic, and it may form a suitable medium for the growth of organisms, even if it be sterilised before use. An oily dressing will not absorb discharges and it requires to be changed after 24 hours as it is then in a septic condition. When the parts have once been bathed in oil it is almost impossible to clean them thoroughly before applying other dressings. Carron oil itself, in Dr. Martin's opinion, has no healing properties and requires to be followed by another dressing if rapid and satisfactory results are to be obtained. In cases of emergency, in fact in all cases of burns, it is necessary that the dressing should be ready to hand. This requirement is well met by picric acid, which may be kept in the form of dry picric gauze, requiring only to be moistened just before it is applied.

MR. CARNEGIE AND MEDICAL HEROES.

THE latest of Mr. Carnegie's apparently inexhaustible benefactions, which is reported to have brought up the sum of his gifts for public purposes to something over £25,000,000, has, he tells us, been prompted by the success of the "Hero Fund" in North America. This has been so great that its founder has decided to extend its benefits to his own land, and it is now common knowledge that this open-handed millionaire has paused for a moment in his endowments of the libraries and other centres of education to hand over one and one-quarter millions of dollars to the Carnegie Dunfermline trustees for the object which he has set forth in a very characteristic letter. He wishes that those many brave men and women who suffer bodily injury during heroic efforts to save human life performed in times of peace "in the British Islands and the waters thereof," shall by means of this fund be put in a financial position a little better, if anything, than was theirs before their act of self-sacrifice until they are able to work again. And if a bread-winner shall have given his life to save some fellow creature his widow and children may claim support from the fund until such time as they can support themselves. The fund may have a higher function than simple compensation, for it may actually rehabilitate some obscure hero who has risen to his opportunity out of a miry past of which he would fain hide the traces. Such a one is to be eligible for his pension so long as he behaves himself without any questions being raised of his antecedents. Mr. Carnegie deprecates strongly any suggestion that his fund shall replace the compensation offered in cases of accident resulting from heroism by private or public agencies already existing. These should bear their burden willingly, he thinks, but he desires to make it absolutely sure that full provision may be made for every case. It is not surprising to anyone who has read the terms of this new trust to learn that it has the support and sympathy of the highest in the land, whose word is to be law in certain questions of its administration. It would, however, hardly concern us to chronicle it, save inasmuch as every premium upon courage and self-sacrifice makes for the well-being of the State, were it not for the fact that Mr. Carnegie in his letter specifies in particular only two classes as being notably productive of heroes, although we are quite sure that he makes no mental distinction between the bravery displayed in time of need by, say, the miner whom he does not mention and the railroad employee whom he does. But his most prominent instance is this: "No action is more heroic than that of doctors and nurses volunteering their services in the case of epidemics." We take it for an especial virtue in Mr. Carnegie that in his benefactions he does not forget the members of a profession the simple exercise of which in the eyes of so large a number of people should bring its own reward, but we must confess to some surprise at his having chosen out an almost routine duty of its practitioners for special illustration of the quality of heroism. It is true that Mr. Carnegie limits his instance to medical ministry during epidemics but we can hardly think that he holds less lightly the action of "doctor and nurse" who attend any patient suffering from a dangerous infectious disorder even though it be not widespread in the community. Indeed, it might be said that their service is less heroic in attending a rich person at a time when they would be liable to the disease, whether they attended him or not, than

it would be in exposing themselves to the risk of infection at a time when there would be no likelihood of their taking it if they held aloof from that one particular case. The idea of a medical practitioner or nurse running away to a non-infected area in times of epidemic is, we hope, inconceivable. But we are ready and proud to admit that cases of special medical heroism in such times do occur which are particularly worthy of such practical recognition as Mr. Carnegie offers. Ready instances may be quoted from Ireland where it happens often that a district medical officer has to treat typhus fever with no available assistance and perhaps in opposition to an ignorant and frightened peasantry. Many will recall the death of William Smyth seven years ago after his splendid struggle waged against the waves of Donegal and still more against the human cowardice that refused him and his brave colleague, Dr. McCarthy, any aid in rowing over a crazy boat to fetch the patients suffering from typhus fever under his charge from their hovels on Arranmore Island to the hospital on the mainland where they could be treated properly. It will be remembered how Smyth contracted the disease and died, a martyr to duty, if ever there was one. At that time in appealing for a memorial fund to help his widow and eight children we wrote: "If he ever knew that he had accomplished the work that he set himself to do he died without thought of the praise his deed would earn for his memory but only with the consciousness that he was leaving those he loved to face the world before he had time to make provision for them." That bitterness may now be spared to the medical man whose life shall be required of him as the price of his admission to the ranks of such heroes. The profession will be no less grateful that their brothers who have suffered severely in the cause of science or humanity but who have escaped with their lives will be remembered under the benefits of Mr. Carnegie's new trust fund, and in this connexion there will be a general hope that its administration may have the case of Mr. J. Hall-Edwards, whose civil list pension is incommensurate with his injuries, brought prominently before them. Whilst he and many others have sustained grievous hurt in the legitimate pursuit of science it is perhaps well to point out that some have to show less honourable because unnecessary scars. Impetuous youth, especially, in medicine as in all other fields of effort, will continue to mistake carelessness for courage and foolhardiness for devotion to duty. We hope that this fund may not seem to put a premium upon such professional rashness, and we could almost wish that its trustees would debar from its benefits any who, for example, suffer direct infection in a bacteriological laboratory through habitual disregard of common-sense precautions, or who seek to remove diphtheritic membrane from a tracheotomy tube by sucking it, a proceeding which is quite unnecessary when proper provision has been made for emergency, but one which seemingly has an evergreen appeal to popular sentiment.

CATS AS PREVENTERS OF PLAGUE.

THE *Indian Medical Gazette* for August prints another article by Lieutenant-Colonel Andrew Buchanan, I.M.S., advocating the up-keep of cats as the best method of counteracting plague. The paper is rather discursive, but it nevertheless contains a large amount of interesting and valuable information. During the past plague season, says the writer, there have been epidemics of plague in 54 towns and villages in Amroati district, and investigations have been made in nearly all of these to find how far the presence or absence of the disease could be accounted for by the absence or presence of cats. The investigations were made by "assistant surgeons, hospital assistants, tahsildars, patwaris, police, vaccinators, and others," but the results were verified in a general way by Colonel Buchanan himself. The reports that he received were too numerous and too voluminous for the inclusion of even a brief outline of them all in a short paper, but it was, he said, "perfectly clear from a perusal of them that the keeping of cats is *the* method of preventing plague." To all other methods, in his opinion, there are objections more or less grave, but to the keeping of cats there are next to none. Hindus object to killing rats because the rat is the *Sowari* (means of locomotion) of their god Gunpati. Some of them even catch rats in order to let them go free in the fields. Jains, it is true, object to cats, but in small towns they are few in number and in villages they are rarely to be found. In Saur plague was severe among the Bhowani Dhers, but the Mallies, who keep buffaloes and consequently cats, which are attracted by the milk, escaped completely. The Dher is not allowed to keep cats because when a cat has kittens or dies in his house he is put out of caste. Some Dhers living in wattle huts escaped the plague entirely. This at first puzzled Colonel Buchanan until he found that rats do not harbour in that kind of structure. Other Dhers living in mud huts were severely visited by the plague. So greatly was the Dher community impressed by these facts that now many of them keep male cats, thus avoiding the caste penalty so far as the birth of kittens is concerned. "It is a great pity," continues Colonel Buchanan, "that the members of the recent Plague Commission did not make some experiments on the cat as a rat destroyer. Neither the members of the Plague Commission nor Professor Haffkine in his recent lecture on the 'Present Methods of Combating Plague' have, as far as I have seen, said a word about the cat. One member of the Commission gives a whole page of figures to show that, in spite of vigorous efforts for a whole year, the number of rats could not be considerably reduced by traps. He does not tell us whether there was one trap or fifty, but I can assure him that his whole argument would be completely upset if a few cats were introduced." Colonel Buchanan looks upon rat destruction and inoculation as temporary expedients capable in certain circumstances of yielding useful results but both in the main hurtful because they distract attention from the only true remedy. "The more attention we give to inoculation," he says in conclusion, "the less we are certain to give to the only sound common-sense method of preventing plague—viz., the keeping of the natural enemy of the animal that is responsible for spreading the disease."

MORTALITY FROM TUBERCULOUS DISEASE IN THE UNITED KINGDOM.

THE annual report relating to 1907 recently issued by the Registrar-General for Ireland contains an interesting comparison of the relative death-rates from tuberculous disease in England and Wales, Scotland, and Ireland during the 43 years 1864–1906. A diagram in this report shows that in the year 1864 the death-rate from all forms of tuberculous disease was equal to 3·3 per 1000 of the estimated population in England and Wales and to 3·6 per 1000 in Scotland, whereas it did not exceed 2·4 per 1000 in Ireland. We referred to this diagram and to several other points which are raised in the communication which follows, but many of the remarks of our correspondent are interesting, so that we publish them in spite of the occasional repetitions. "In England and Wales the annual death-rate from tuberculous disease has steadily declined during the 43 years referred to, and had fallen to 1·6 per 1000 in 1905 and in 1906, this decline being equal to 51·5 per cent. In Scotland the annual death-rate from this

form of disease rose from 3·6 per 1000 in 1864 to 3·9 in 1870 and in 1871, since which it has steadily declined to 2·1 per 1000 in 1905 and in 1906; thus the decline in the whole period of 43 years has been equal to 41·7 per cent. in Scotland, against 51·5 per cent. in England and Wales. In Ireland, on the other hand, the tuberculous death-rate, which in 1864 was 27·3 per cent. lower than the rate in England and Wales and 33·3 per cent. below that which prevailed in Scotland, has since increased instead of having declined; the annual rate rose from 2·4 per 1000 in 1864 to 2·9 in 1880, and after varying fluctuations was equally high in 1897, 1898, 1900, and 1904, but fell again to 2·7 in 1905, 1906, and 1907. Thus the recorded death-rate from tuberculous disease in Ireland showed an actual increase of 12·5 per cent. during the 44 years 1864–1907. Calculated in decennial periods it appears that the annual death-rate from all forms of tuberculous disease in Ireland was equal to 2·6 per 1000 in the ten years 1871–80, to 2·7 in 1881–90, and to 2·8 in 1891–1900; during the past seven years of the current decennium the mean annual rate has also been equal to 2·8 per 1000. This increase of fatal tuberculous disease in Ireland, having regard to its marked decline in England and Wales and in Scotland, fully justifies the attention which it is receiving in Ireland, although there are some grounds for doubting whether these statistics afford an entirely trustworthy measure of the true death-rate from tuberculous disease among the Irish population. In the first place the high proportion of emigration from Ireland, mainly of selected young and healthy adults, seriously affects the mortality statistics of that country, and more than probably raises the recorded death-rate from tuberculous disease, in the same manner as it has given rise to alarming reports of the excessive and increasing prevalence of insanity in Ireland. That the long-continued elimination from the Irish population of healthy young adults, even ignoring the return of a certain proportion of such emigrants whose health breaks down abroad, undoubtedly affords some explanation of the absence of decline in the recorded death-rate from tuberculous disease in Ireland, is more or less confirmed by an interesting diagram comparing the rates of mortality from this form of disease in 1905 at different ages in the three divisions of the United Kingdom. This diagram shows that practically the whole of the excess of mortality from tuberculous disease in Ireland during that year occurred at the ages 15 to 35 years, the precise age-period most affected by emigration. The Registrar-General for Ireland, moreover, in his recently issued report calls attention to the important fact that in 1907 no less than 24·9 per cent. of the causes of the registered deaths in Ireland were uncertified, while in England the proportion did not exceed 1·4 per cent., and in Scotland the percentage was not higher than 2·3 in 1905. It is obvious that the value for comparative purposes of the recorded death-rate from tuberculous diseases, and indeed from other forms of disease, must be seriously depreciated by this remarkable and excessive proportion of uncertified causes of death in Ireland."

COMPULSORY INSURANCE OF THE WAGE-EARNING CLASSES IN NORWAY.

THE report of a Government committee appointed in Norway to investigate the proposed workmen's compulsory insurance against ill-health has now been published. The scheme provides for the insurance of all persons whose yearly income does not exceed £66 in the country or £77 in towns, the minimum age for insurance being 15 years and the period of service one week or more. Chronic invalids and sailors in foreign parts are, however, excepted. It is proposed that the payments made to the insurance fund shall be apportioned as follows. The person insured will contribute six-tenths, the employer one-tenth, the commune or county one-tenth, and the Government two-tenths. The Government is also expected to pay £12,500 towards starting the machinery of the scheme. On these terms an insured person may obtain 60 per cent. of his average daily wage for 26 weeks every year, a sum not exceeding £2 16*s.* for funeral expenses, and medical attendance free for himself, wife, and children under 15 years. Gratuitous treatment in hospital is also proposed to be given on a medical practitioner's recommendation. Women who are insured may obtain free medical attendance and pecuniary assistance for four weeks during the lying-in period. It is estimated that the cost will be about 6,500,000 kroner (approximately £330,000), of which over 4,000,000 kroner will be contributed by the workers, while the rest is to be paid by the employers, the commune, and the Government, according to the proportions already mentioned. The scheme will probably be introduced to the Storting as the Government's most important Bill next session. Its various provisions seem to have been carefully considered and it presents the important advantage of encouraging thrift. The population of Norway is only about 2,500,000 and there are no extensive manufacturing industries. The results of the experiment will, no doubt, be observed with much interest by politicians and social reformers in other countries besides Norway.

CARBOLIC ACID IN TETANUS.

Dr. César Allievo of Buenos Ayres reports in *La Semana Médica* of August 13th an interesting case of well-marked tetanus which yielded very promptly to treatment by carbolic acid administered hypodermically. The patient was a middle-aged lady who, ten days after cutting a corn on the great toe of the right foot, was found to be suffering from severe headache with a high temperature and an abscess on the inner aspect of the metatarso-phalangeal joint with great pain and tenderness over the whole of the inner side of the foot. Local anæsthesia was employed and an incision was made with antiseptic precautions, letting out a quantity of thick creamy pus. The wound healed satisfactorily and in a few days the patient was able to leave her bed. About a month after the cutting of the corn she again complained of pain in the whole of the right foot and also in the popliteal and inguinal regions of the same side and two or three days later of headache with difficulty in opening the mouth and stiffness of the neck. On examination the pupils were found to be contracted; there were marked photophobia and general hyperæsthesia, the slightest touch of the right foot or leg, or even arm, producing painful clonic general spasms. There was considerable dyspnœa. The urine contained neither sugar nor albumin. A hot bath and a chloral mixture were prescribed and as it was considered that it was too late to expect much good from antitetanic serum the carbolic acid treatment was decided on and 1·5 cubic centimetres of a 2 per cent. solution of carbolic acid were injected hypodermically on the same evening and repeated early on the next morning. A smaller dose, one cubic centimetre, was administered again at noon and at 4 and at 8 P.M. The symptoms had by that time begun to abate, for although the photophobia and headache were still equally severe, the trismus and contraction of the neck and the reflex spasms were far less marked and there was no dyspnœa. The chloral, which had been given very frequently, seemed to be causing gastric disturbance and so was ordered at longer intervals. On the next day two injections were given of one cubic centimetre and as the chloral continued to produce pain in the stomach it was given by enemata.

All the symptoms continued to show improvement. By the next morning—60 hours after the first carbolic injection—the pain in the head was much better and the mouth could be opened and the neck moved; the reflex spasms, too, had disappeared, also the photophobia and the pain in the foot. Two more injections were given on that day and one on each of the two following days, at the end of which time—i.e., five days from the commencement of the treatment—all the distinctive symptoms of tetanus had disappeared. The urine was carefully examined all through and no signs of carbolic acid poisoning were detected. The patient was able to leave her bed in a few days, when general lassitude and marked weakness of the jaw and right side only remained. The carbolic treatment of tetanus, combined with the administration of chloral or antitetanic serum, has of late attracted a certain amount of attention and is generally associated with the name of Professor Baccelli, though it does not seem certain that he was the first to employ it. It has the great advantage of being always at hand, and although the hypodermic method of administration is usually adopted, the solution may be given by the mouth or per rectum. Dr. Osherovski more than 13 years ago reported in a Russian medical journal[1] the case of a man who ten days after a gunshot wound in the leg began to show symptoms of tetanus which in spite of huge doses of morphine and chloral increased in severity for another ten days. Carbolic acid was then tried. Of this a 2 per cent. solution was employed and 12 drops were administered hypodermically every three hours. In two days there was a marked improvement and the patient was convalescent after 28 injections. Dr. Sbrana[2] used a 2 per cent. solution of carbolic acid successfully in the case of an Arab who developed tetanus after receiving a wound which had been dressed with cobwebs and washed with urine. Mr. A. B. J. Eddowes of Loughborough reported in THE LANCET, Jan. 16th, 1897, p. 168, the case of a man who had received a punctured wound in the great toe of the left foot which suppurated and was followed in three weeks by stiffness of the jaw, which rapidly became more marked and a week later, in spite of treatment by bromides and chloral, convulsions occurred. Hypodermic injections of 5 minims of a 2 per cent. solution of carbolic acid were then given night and morning for four days, when the patient's condition was greatly improved. He made a good recovery. Professor Baccelli[3] has treated a considerable number of cases with carbolic acid. He seems at first to have employed a 1 per cent. solution, but afterwards to have increased the strength to 2, 3, 4, and even 5 per cent. Symmers[4] gives a review of 75 cases treated by carbolic acid with a total mortality of only 23 per cent. Felici and Maremmi[5] also publish successful cases.

THE LADIES' HOME AT CANNES.

SITUATED above the town of Cannes, in the healthiest surroundings, the Ladies' Home, which was established a quarter of a century ago with the object of affording rest and change of scene to British and American ladies of small means who are in feeble health or are suffering from the effects of overwork, continues to fulfil the purpose for which it was founded. The inmates, who must not be in actual ill health or invalids requiring constant nursing, pay their own fares out and home and £1 per week for maintenance. Mental cases or cases of an unfavourable tuberculous character are not admitted. A private room is provided for each inmate, while there are a common dining-room and a sitting-room and also a private chapel. The home is under the supervision of two British physicians of Cannes whose services are given gratuitously during the season which extends from Nov. 1st to the end of April. There are also an experienced lady superintendent and a trained nurse on the staff. The accommodation provided is for 34 ladies. This institution does excellent work and is entirely supported by subscriptions and donations of the British and American residents and visitors to Cannes. It deserves wider recognition and it should only be necessary to make the existence of the institution better known to the medical profession of this country to insure an increased financial support and an increased supply of fitting candidates. Application should be made to Miss Hankey (Hôtel des Anglais, Cannes, during the winter, and the Palace, Much Hadham, Herts, in the summer), who will be pleased to give full particulars.

THE CHOLERA IN RUSSIA.

THE extension of cholera to the Black Sea has affected several southern Russian ports. The disease has been officially reported as having occurred recently at Odessa, Rostov, Kieff, Kherson, Kronstadt, and Ekaterinoslav; while newspaper accounts also mention its presence at Warsaw, Kertch, Taganrog, Theodosia, Nicolaieff, and Azov. Similar reports from St. Petersburg state that there is a decline in the number of cases, the daily returns now being well below 300. Whereas on Sept. 22nd the incidence had reached 419 cases with 177 deaths, on Sept. 30th 228 cases with 93 deaths were reported, the returns from the provinces showing a like decline. The disease has been chiefly confined to the poorer classes. It is to be hoped that this drastic lesson will induce the authorities of the Russian capital to instal a proper water-supply and drainage system throughout the city, even though they disregarded the even more terrible warning which the cholera gave them in the last decade of the last century. At the very least it may be expected that adequate provision of infectious wards may be made against the contingency of another outbreak. The reports of the overcrowding of dying patients and the deficiency of sanitary equipment are only redeemed by the accounts of the devoted service which the medical officers attached to the hospitals have given despite such grave disabilities. Concerning the etiology of the disease a correspondent has forwarded us the following curious communication from a relative resident in the neighbourhood of Minsk and Bobrinsk: "A doctor in Petersburg told E—— earlier in the year that there was sure to be a bad outbreak of cholera this autumn in the town as the influenza outbreak in the winter was always accompanied by colic and pain in the stomach, and he said whenever this happened there was always an outbreak of cholera the next autumn. True enough, it has come." Our correspondent asks if there can be some mysterious connexion between the two diseases. The observation is interesting but we are not aware that any causal relationship has been recognised by expert observers between the gastric form of influenza and cholera. It is perfectly true that severe epidemic enteritis is often the precursor of an outbreak of cholera in eastern countries, but it is more than probable that the name "choleraic diarrhœa" is simply an euphemism for the dreaded disease itself and that its employment to allay public anxiety has often been fraught with grave danger to a community which would otherwise have faced the evil squarely and taken early measures to mitigate its ravages. It is, however, quite legitimate to suppose that a number of persons whose powers of resistance have been weakened by a severe outbreak of influenza, especially when it has taken a gastric or enteric form, would afford an excellent soil for the development

[1] For abstract see THE LANCET, July 20th, 1895, p. 169.
[2] Riforma Medica, March 16th, 1896, quoted Brit. Med. Jour. Epitome, January, 1896, p. 72.
[3] Medical Annual, 1901, p. 527; 1904, p. 684; 1905, p. 577.
[4] American Medicine, August 15th, 1903, quoted in the Medical Annual, 1904, p. 577.
[5] Il Policlinico, January, 1906, quoted in the Medical Annual, 1907, p. 568.

of cholera if the infection should gain a foothold amongst them. As we wrote last week, there is no ground for alarm lest this should happen in England. The Local Government Board is keeping the port and riparian sanitary authorities fully informed of the extent and topography of the epidemic and has intimated to all such authorities that all necessary steps should be taken under the General Order of Sept. 9th, 1907, relating to cholera, yellow fever, and plague in dealing with vessels arriving from the Baltic and North Sea ports and from Southern Russia.

THE ORIGIN AND PREVALENCE OF ENTERIC FEVER IN THE DISTRICT OF COLUMBIA.

A SECOND report[1] on the origin and prevalence of enteric fever in the District of Columbia embodies the results obtained during 1907, including epidemiological investigations of the disease during the enteric fever season, bacteriological examinations of drinking water, bacteriological and chemical examinations of milk, laboratory tests to assist in the diagnosis of the disease, and examinations of specimens —e.g., ice-cream and shell-fish—in search of bacillus carriers. The results so far indicate that enteric fever will cease to be a problem in any community having clean water and an uninfected milk-supply, if in addition cases of the disease are treated as dangerous to the community. It was found that the drinking water was not responsible for the spread of the infection in the District of Columbia. The disease was largely imported from other States and in many cases it was contracted through contact with persons or with articles handled or soiled by persons in the febrile stage of the disease. Infected milk was found to be one of the important known factors in the spread of the disease. The report concludes with certain recommendations: 1. That all cases and suspected cases of enteric fever should be treated as contagious and dangerous to the community, the treatment including isolation, placarding, and the prompt disinfection of the patient's bedding, discharges, and so on. 2. That laboratory facilities should be provided free of cost to aid physicians in the early diagnosis of the disease and to determine when patients are no longer a menace to the public health. 3. That all milk not "certified" or "inspected" should be pasteurised, under official surveillance, especially during the enteric fever season. 4. That a law should be enacted prohibiting the handling or sale of milk or milk products in any dwelling or in any structure so situated as to render these products especially liable to contamination. 5. That a law should be enacted prohibiting the care of a case of enteric fever in any house where foods or beverages liable to convey the infection are sold or prepared for sale. 6. That in order to furnish a water-supply of a satisfactory grade throughout the year adequate storage reservoirs should be provided, failing which alum should be used as a coagulant during periods of high turbidity.

THE TREATMENT OF LARYNGEAL TUBERCULOSIS.

WE have received a reprint from the *American Journal of the Medical Sciences* (August, 1908) of a paper entitled "Clinical Notes on Laryngeal Tuberculosis," by Dr. Beverley Robinson, clinical professor of medicine in the University and Bellevue Hospital Medical College, New York. Dr. Robinson gives the results of his own experience in the treatment of laryngeal tuberculosis and also gives a short *résumé* of the methods adopted by other physicians. He considers that for the relief of pain caused by abraded surfaces the frequent local use of orthoform is a satisfactory remedy. Fortunately, orthoform is innocuous and so may be freely employed. He also endorses the favourable reports which have been recorded of the good effects of lactic acid when actual ulceration is present. Applied in from 10 to 80 per cent. solution it brings about considerable amelioration if not complete healing of the parts affected. A local anæsthetic is often required before and after its application, and especially is this true whenever curetting has been practised prior to the use of the acid. Dr. Robinson, however, is not an advocate of punching and curetting. In the way of protective and curative treatment he considers two things are essential—namely, rest for the larynx and inhalations. With regard to the former, no doubt exists that this is one of the most important factors in the modern treatment of laryngeal tuberculosis; we consider that it is the most valuable measure that can be employed but it is sometimes difficult to secure the needed rest. As a rule the patient is only too willing to aid the physician by refraining from speech for a considerable period of time, but in some cases a troublesome cough disturbs the rest, and then some additional therapeutical means is necessary. Dr. Robinson writes enthusiastically as to the results of antiseptic inhalations. He advises the long-continued use of the perforated zinc inhaler with inhalations of creasote and alcohol, or, when there is much irritative cough, of beechwood creasote, alcohol, and spirit of chloroform in equal parts. He maintains that he knows of "absolutely no other method, no other local application, no surgical measure, which will afford anything like the same amount of relief to symptoms and hasten and promote cure in suitable cases to the same degree as will the perforated zinc inhaler with the inhaling fluid recommended." Although we do not hold such a strong view on the value of this method as does Dr. Robinson, nevertheless it undoubtedly is often of use as an adjunct to the rest treatment, especially in the relief of cough, which, as we have already said, occasionally retards the good effects brought about by the abstinence from speech.

THE Department of Public Health of Queensland, in a bulletin dated August 22nd, reports that Brisbane was free from plague both in man and in rodents for the week ending August 22nd. The Governor of Mauritius, in a despatch to the Secretary of State for the Colonies, states that three cases of plague were reported during the week ended Sept. 24th. The number of deaths for the week was three.

HASLAR NAVAL HOSPITAL.

Dr. T. J. MACNAMARA, Financial Secretary to the Admiralty, visited Haslar Naval Hospital on the afternoon of Sept. 29th at the closing of the last class of naval surgeons, numbering 15, by Inspector-General James Porter, C.B., Director-General of the Royal Navy Medical Service. The class had been instructed by Fleet-Surgeon P. W. Bassett-Smith, assisted by Fleet-Surgeon J. J. Walsh and Staff-Surgeon H. C. Adams. There was a large attendance at the interesting proceedings, including Inspector-General T. D. Gimlette, C.B., Deputy-Inspector-General J. Crowley, Deputy-Inspector-General Craig, Fleet-Surgeon Townsend, Fleet-Surgeon R. Willan, Fleet-Surgeon Bassett-Smith, Rear-Admiral C. G. Robinson, and others.

Inspector-General GIMLETTE said that they had met to be in attendance at the presentation of prizes to the class of surgeons on their entry into the service and Dr. Macnamara had been kind enough to come specially from London to make the presentation. It was his pleasant duty to introduce those young officers and he was very glad to be able to give a good

[1] Bulletin No. 44, Hygienic Laboratory, Public Health and Marine Hospital Service of the United States, by M. J. Rosenau, L. L. Lumsden, and Joseph H. Kastle. Washington, 1908, pp. 66, with maps and curve charts.

account of them. At the risk of making these young men blush he would say that they had a very good opinion of them. They had won golden opinions during the four months they had been there and the report of Fleet-Surgeon Bassett-Smith to the Director-General stated:—

> In the past session considerable changes have been made in the instructional course, subjects of the greatest practical utility for surgeons in the navy have received extra attention, particularly the examination of recruits, management and treatment of venereal cases, and the administration of anæsthetics. They have also received practical demonstrations in shallow and deep water diving and in submarine vessels. I have to report that the surgeons have shown great interest in the subjects under their study throughout the course. They have been diligent in their work and have taken full advantage of the facilities for instruction which have been offered to them, much of which was new but of importance in their future career. In carrying out the professional duties required of them in the wards, the surgeons, as a whole, have received special commendation from the senior medical officers, having given general satisfaction. The following officers have been specially mentioned for zeal and ability—Surgeons Atkinson, Austen, Custance, Fisher, Hayes, and Rivers. For proficiency in anæsthetics Surgeons Atkinson, Austen, and Fisher are noted, and Surgeon Robinson for skill in radiography. Special reference is due to Surgeon Atkinson, who, assisted by Surgeon Custance, devoted much time and skill, with very considerable success, to the treatment of difficult cases with gonococcal vaccines.

Inspector-General Gimlette added that the naval medical officers could congratulate themselves very much on having so strong an addition to their professional forces.

Dr. Macnamara then presented the prizes as follows:—

Naval hygiene group.—Gold medal awarded to Surgeon A. T. Rivers, of Guy's Hospital, Surgeon A. R. Fisher being second.

Tropical medicine group.—Microscope awarded to Surgeon W. H. Edgar, of St. Mary's Hospital, Surgeon A. R. Fisher being second.

Practical analysis group.—Silver medal and books awarded to Surgeon E. L. Atkinson, of St. Thomas's Hospital, Surgeon J. S. Austen being second.

The order of merit on passing out of Haslar was:—

	Marks.		Marks.
1. A. T. Rivers	4662	9. G. H. C. Given	3766
2. J. S. Austen	4529	10. J. M. Hayes	3350
3. G. W. M. Custance ...	4363	11. P. B. Egan	3342
4. A. R. Fisher	4308	12. F. H. Stephens	3280
5. W. H. Edgar	4218	13. S. Bradbury	3235
6. E. L. Atkinson	4024	14. R. M. Riggall	3059
7. A. L. Robinson	3844	15. G. A. Bradshaw	2742
8. C. J. Aveling	3827		

Subsequently to presenting the prizes, Dr. MACNAMARA delivered the following address: "You will believe me when I say that I am honoured to take part in to-day's function. You are entering a great public service, the greatest, I think, the world has ever known. And in that great service you have been called to a peculiarly responsible function. Our bluejackets and marines are fine men—I think them finer every time I meet them. Their training is long and costly, and we cannot rapidly and cheaply replace them as we could do a hundred years ago. We call upon them even in peace times to serve their King and country in all climes and under conditions that are very often physically arduous and exacting. And whether duty calls them to the plague-stricken swamp, the fever-laden lowlands, or the frost-bitten coast their response is always a resplendent reflection of the traditions of the service to which they belong. Further, we can give them no choice as to their medical attendant. Therefore we are bound, as I think, to furnish them when they fall sick from hard campaigning, or exposure, or—may God forbid that it should come in our time—from the fiendish ravages of modern naval warfare, with the very best the country can provide in the way of medical and surgical services. And, Gentlemen, I want you and the medical schools generally to understand that, so far as the Admiralty is concerned, we mean to do it. We mean our hospitals to be well-found and our doctors as good as any in their great profession. But you on your part are bound to help us. You are bound to be ever up-to-date, keen and enthusiastic in your calling. You enter a field of practice second to none in width, variety, and interest. You must not only be ready to apply the latest knowledge for the curing of the ailing; you must also be alert with the most scientific measures for the prevention of disease. More than ever the safety of this far-flung empire depends upon the efficiency of the fleet. And, certainly, more than ever, the efficiency of the fleet depends upon the man behind the gun. And behind that man you stand, ready to play your arduous and responsible part. Gentlemen, I have always heard that the four great Nelsonic qualities which go to make up the efficiency of the naval officer are: (1) fearlessness of responsibility; (2) fertility of resource; (3) power of initiative; and (4) self reliance. How acutely they apply in his field of duty to the naval medical officer! Do your part and we will do ours. Your careers are in your own hands. Ample opportunities will be afforded you to continue your studies by post-graduate courses of instruction. The school of tropical medicine will be opened to you periodically and the fresh discoveries of medical science will be found waiting for you and at your disposal on your return from commission. I hear men spoken of as 'having had all the luck.' But, behind that luck, I have invariably found tireless patience, indomitable perseverance, and unquenchable enthusiasm. So far as we are concerned we mean that zeal and enthusiasm shall receive all the encouragement we can give them. Remember, that in your profession the one fatal thing is to get rusty. And rusty you will get if you fail to remember that, even on the day of your retirement, you are barely on the threshold of knowledge. If I had the choice I think I would prefer a natural death to the ministrations of a rusty doctor. You are privileged to follow, let me also say, in the footsteps of great and distinguished men. Professor Huxley entered the service as a naval medical officer in 1846 and served the first part of his time in this very hospital. Sir Joseph Hooker, the botanist, director of Kew Gardens from 1865 to 1885, and President of the Royal Society 1873–77, served officially as an assistant surgeon in the *Erebus* during Ross's voyage in the Antarctic Seas. Sir Joseph Hooker, I may say, is still a naval medical officer on the retired list. Smollett, the novelist, entered the Navy as a doctor in 1739, and served in the operations against Carthagena in 1741. Thomas Dover, famous for ever through 'Dover's powders,' sailed in 1708 on a privateering voyage round the world during which he found Alexander Selkirk on Juan Fernandez and brought him home. Sir Gilbert Blane served in the Navy under Rodney, and Charles Darwin was also in the Navy as a naturalist on board the *Beagle*. And to this incomplete record I might very well add the names of naval medical officers whose gallantry on the field of action has won the Victoria Cross and many distinguished service Orders. But I know you too well to appear even to make a parade of this. Gentlemen, good-bye. Permit the son of a man who fought in the trenches before Sevastopol, one who began life in a British barrack-room, and one who well knows the gentleness, the tender sympathy, and the generous-heartedness of the medical men of both services, to wish you God-speed in the noble calling which you have elected to follow."

At the close a vote of thanks was accorded to Dr. Macnamara for his attendance, on the proposition of the Director-General.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8140 births and 4115 deaths were registered during the week ending Sept. 26th. The annual rate of mortality in these towns, which had steadily declined in the five preceding weeks from 15·8 to 13·9 per 1000, further fell to 13·2 during the week under notice. During the 13 weeks of the past quarter the annual death-rate in these towns averaged 13·4 per 1000, and in London the mean rate in the same period did not exceed 12·5. The lowest annual death-rates in these towns during the week under notice were 3·6 in Walthamstow, 6·2 in Hastings, 7·1 in Bury, and 7·4 in Aston Manor; the rates in the other towns ranged upwards, however, to 18·8 in Blackburn, 18·9 in Tynemouth, 19·8 in Warrington, and 20·0 in Salford. In London the death-rate during the week was 13·3 per 1000. The 4115 deaths from all causes in the 76 towns showed a further decline of 222 from the decreasing numbers in the four preceding weeks, and included 527 which were referred to the principal epidemic diseases, against numbers declining from 1343 to 677 in the four previous weeks; of these 527 deaths, 353 resulted from diarrhœa, 42 from whooping-cough, 39 from diphtheria, 35 from "fever" (principally enteric), 31 from measles, and 27 from scarlet

fever, but not one from small-pox. The deaths referred to these epidemic diseases during the week were equal to an annual rate of 1·7 per 1000, against rates declining from 4·3 to 2·2 in the four preceding weeks; in London the death-rate from these diseases last week did not exceed 1·6. No death from any of these epidemic diseases was registered last week in Derby, Hornsey, Reading, Bournemouth, Hastings, Burton-on-Trent, or in Stockton-on-Tees, whereas the annual death-rates therefrom ranged upwards in the other large towns to 3·8 in Blackburn and in Tynemouth, 3·9 in Great Yarmouth, and 4·0 in Hull. The deaths attributed to diarrhœa in the 76 towns, which had steadily declined in the five preceding weeks from 1134 to 507, further fell to 353 in the week under notice; the highest death-rates last week from this cause were 2·9 in Wigan, 3·0 in Burnley, 3·5 in Hull, and 3·8 in Tynemouth. The 42 fatal cases of whooping-cough showed an increase of four upon the low number in the previous week, and were equal to an annual rate of 1·1 in Walsall. The 39 deaths referred to diphtheria showed, on the other hand, a decline of four, including 15 in London and its suburban districts, four in Manchester and Salford, and two each in Portsmouth, Southampton, and King's Norton. The 35 fatal cases of "fever" exceeded the number in any previous week of this year; 11 were returned in London and its suburban districts, four in Bolton (equal to an annual rate of 1·1), and two each in Liverpool, Birmingham, and Bradford. The fatal cases both of measles and of scarlet fever showed a slight decline from the numbers in the previous week; those of measles in Warrington were, however, equal to a rate of 1·5, and scarlet fever caused three of the deaths in Merthyr Tydfil, equal to a rate of 2·0 per 1000. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had been 2855, 3005, and 3285 in the three preceding weeks, had further increased to 3467 on Sept. 26th; the number of new cases of this disease admitted to these hospitals during the week under notice were 565, against 395, 472, and 625 in the three previous weeks. The deaths in London referred to pneumonia, and other diseases of the respiratory organs, which had been 102, 124, and 137 in the three preceding weeks, further rose to 138 last week, but were 19 below the corrected average number in the corresponding week of the five years 1903–07. The causes of 42, or 1·0 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were again duly certified in London, Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Nottingham, Leicester, and in 50 other smaller towns during the week under notice; 11 uncertified causes of death were, however, registered during the week in Birmingham, five each in Liverpool and Blackburn, and three in Manchester.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 13·7 and 14·4 per 1000 in the two preceding weeks, declined again to 13·5 in the week ending Sept. 26th. During the 13 weeks of the past quarter the annual death-rate in these eight towns averaged 13·8 per 1000 and exceeded by 0·4 the mean rate during the same period in the 76 English towns. Among the eight Scotch towns the death-rate during the week under notice ranged from 9·9 and 11·9 in Leith and Perth to 14·1 in Glasgow and 16·4 in Dundee. The 475 deaths in the eight towns showed a decline of 33 from the number in the previous week, and included 59 which were referred to the principal epidemic diseases, against numbers declining from 107 to 65 in the five preceding weeks; of these 59 deaths, 35 resulted from diarrhœa, nine from whooping-cough, eight from diphtheria, four from "fever," two from scarlet fever, and one from measles, but not one from small-pox. These 59 deaths were equal to an annual rate of 1·7 per 1000, corresponding with the mean rate from the same diseases in the 76 large English towns. The deaths attributed to diarrhœa in the eight Scotch towns, which had been 64, 52, and 35 in the three preceding weeks, were again 35 last week; of these, 14 occurred in Glasgow, six in Aberdeen, five in Edinburgh, and three both in Dundee and in Paisley. The nine fatal cases of whooping-cough showed a further decline from recent weekly numbers; eight were returned in Glasgow. The eight deaths from diphtheria, on the other hand, showed a further slight increase upon recent weekly numbers, and included five in Glasgow, two in Edinburgh, and one in Paisley. The four deaths referred to "fever" were fewer by five than those returned in the previous week, two being certified as enteric and two as cerebro-spinal meningitis; all these four deaths from "fever" occurred in Glasgow. The fatal cases both of measles and of scarlet fever were again below the average. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 44 and 73 in the two previous weeks, declined again to 59 in the week under notice, and were within one of the number returned in these towns in the corresponding week of last year. The causes of 15, or 3·2 per cent., of the deaths registered in the eight towns during the week were not certified; in the 76 English towns during the same week the proportion of uncertified causes of death did not exceed 1·0 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had declined in the five preceding weeks from 24·1 to 19·3 per 1000, rose again to 20·8 in the week ending Sept. 26th. During the 13 weeks of the past quarter the death-rate in Dublin averaged 19·9 per 1000; the mean rate during the same period did not exceed 12·5 in London and 12·9 in Edinburgh. The 157 deaths of Dublin residents during the week under notice showed an increase of 11 upon the number returned in the previous week, and included 18 which were referred to the principal epidemic diseases, against numbers declining from 44 to 21 in the five preceding weeks. These 18 deaths were equal to an annual rate of 2·4 per 1000; the rate during the week from the same diseases did not exceed 1·6 in London and 1·3 in Edinburgh. Of the deaths from these epidemic diseases in Dublin during the week under notice, 12 resulted from diarrhœa, four from measles, and one each from whooping-cough and "fever," but not one from scarlet fever, diphtheria, or small-pox. The deaths attributed to diarrhœa, which had declined in the five preceding weeks from 39 to 16, further fell last week to 12. The fatal cases of measles rose again to four last week, against numbers declining from eight to three in the four previous weeks. The 157 deaths from all causes during the week included 45 of infants under one year of age and 32 of persons aged upwards of 60 years; the deaths of infants exceeded the number in the previous week by 14. Five inquest cases and three deaths from violence were registered; and 61, or 32·5 per cent., of the deaths occurred in public institutions. The causes of six, or 3·2 per cent., of the deaths registered during the week were not certified; in London the causes of all the 1225 deaths were duly certified, while in Edinburgh the proportion of uncertified causes of death was 3·7 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeon: A. H. L. Cox to the *President*, additional, for three months' course of study at the West London and King's College Hospitals.

SPECIAL RESERVE OF OFFICERS.

The undermentioned officer, having assented to be transferred, is appointed to the Special Reserve of Officers from the date stated, retaining the rank and seniority which he held while in the Militia:—The Durham Royal Field Artillery, from The Durham Royal Garrison Artillery (Militia) (dated July 5th, 1908): Surgeon-Lieutenant-Colonel James Rawlings.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Lieutenant-Colonel and Honorary Colonel Francis Lawrance Stephenson, C.B., from the Honorary Colonelcy of the Eastern Command, Woolwich Companies, Royal Army Medical Corps (Volunteers), is appointed to the Honorary Colonelcy of the Royal Army Medical Corps of the 2nd London Territorial Division, with precedence as in the Volunteer Force (dated April 1st, 1908).

1st South Midland Mounted Brigade Field Ambulance: William Henderson Stephen to be Captain (dated July 31st, 1908). Thomas Henderson Forrest to be Lieutenant (dated July 31st, 1908).

3rd East Anglian Field Ambulance: Surgeon-Captain Daniel Mowat, from the 3rd Volunteer Battalion, The Essex Regiment, to be Major (dated April 1st, 1908). Surgeon-Captain Josiah Oldfield, from the 1st Volunteer Battalion, The Essex Regiment to be Captain (dated April 1st, 1908).

2nd Home Counties Field Ambulance: Lieutenant Albert Richard Henchley, from the Eastern Command, Maidstone Companies, Royal Army Medical Corps (Volunteers), to be Major (dated April 1st, 1908). Lieutenant William Henry Flint, from the Eastern Command, Maidstone Companies, Royal Army Medical Corps (Volunteers), to be Lieutenant, with precedence as in the Volunteer Force (dated April 1st, 1908). Herbert Stanley Hollis to be Lieutenant (dated April 27th, 1908). David Livingston Hamilton (late Surgeon-Lieutenant, 4th Volunteer Battalion, The Manchester Regiment) to be Lieutenant (dated May 5th, 1908). Raby Montague Grogono to be Lieutenant (dated May 5th, 1908).

3rd London Field Ambulance: Quartermaster and Honorary Captain James W. Bennett is granted the honorary rank of Major (dated August 31st, 1908).

1st West Riding Field Ambulance: James Mackinnon to be Lieutenant (dated April 1st, 1908).

3rd Wessex Field Ambulance: Alexander Milne-Thomson (late Surgeon-Major, the 9th New Zealand Mounted Rifles, South African Field Force) to be Lieutenant (dated July 6th, 1908).

1st London General Hospital, Royal Army Medical Corps: The undermentioned to be officers whose services will be available on mobilisation (dated July 31st, 1908):—To be Lieutenant-Colonels: Norman Moore, William Harrison Cripps, Samuel West, and William Bruce Clarke. To be Majors: Joseph Arderne Ormerod, Anthony Alfred Bowlby, C.M.G., Wilmot Parker Herringham, Charles Barrett Lockwood, Howard Henry Tooth, C.M.G., D'Arcy Power, Archibald Edward Garrod, and Holburt Jacob Waring. To be Captains: James Calvert, William McAdam Eccles, Herbert Morley Fletcher, Robert Cozens Bailey, John Hannah Drysdale, Louis Bathe Rawling, Percival Horton-Smith-Hartley, M.V.O., and George Ernest Gask. 5th Northern General Hospital: The undermentioned to be officers whose services will be available on mobilisation (dated Sept. 30th, 1908):—To be Lieutenant-Colonels: Frank Montague Pope, George Cooper Franklin, Reginald Pratt, and Claude Douglas. To be Majors: Astley Vavasour Clarke, Robert Sevestre, Thomas Villiers Crosby, John Thomas Horron Davies, Henry John Blakesley, Cecil Edward Marriott, John Stretton Sloane, and James Duncan Slight. To be Captains: Robert Stewart, Joseph Edward Waite, Felix Bolton Carter, Ernest Lewis Lilley, Richard Milbourne West, Robert Robertson Young, James Williamson Patrick, Edgar Vaughan Phillips, Sidney Frederick Smith, Ralph Michell, Leonard Erasmus Ellis, Frederick William Bennett, Robert Wallace Wesley Henry, Louis Kenneth Harrison, Wilfred Ernest Gibbons, Robert Hilton Fagge, Robert Basil Stamford, and William Moffat Holmes.

3rd Scottish General Hospital: The undermentioned to be officers whose services will be available on mobilisation (dated July 3rd, 1908:—To be Lieutenant-Colonels: Sir Hector Clare Cameron, Samson Gemmell, Ralph Stockman, and Robert Muir. To be Majors: Thomas Kennedy Dalziel, Henry Rutherfurd, James Henderson Nicoll, Walter King Hunter, John Marshall Cowan, James Walker Downie, Andrew Maitland Ramsay, and Duncan Macartney. To be Captains: William McLennan, James Laurie, Robert Barclay Ness, John McCubbin Johnston, James Carslaw, John Towart, John Morton, Alfred Alexander Young, William Walls Christie, Alexander MacLennan, Ernest George Fortune, James Campbell McClure, Robert Fullarton, John Gilchrist, Alexander Henry Edwards, Mathew Logan Taylor, John Gracie, Leonard Findlay, Charles Campbell Cuthbert, and Archibald Wilson Harrington.

4th Scottish General Hospital: the undermentioned to be officers whose services will be available on mobilisation (dated July 3rd, 1908):—To be Lieutenant-Colonels: Alexander Napier, James Crawford Renton, John Barlow, and George Stevenson Middleton. To be Majors: Robert Henry Parry, James Hogarth Pringle, Thomas Kirkpatrick Monro, James Grant Andrew, John Binnie McKenzie Anderson, Andrew Freeland Fergus, James Kerr Love, and David Couper. To be Captains: James Hamilton, Andrew Nicholson McGregor, Adam Brown Kelly, Andrew Stewart Tindal, Douglas Wills Russell, David Lamb, James Maclean, George Burnside Buchanan, Hugh Walker, Farquhar Macrae, Edward Mackay, James Weir, John Allan Craigie Macewan, James Donald Holmes, John Henderson, James Robert Chalmers, Alexander Fraser, David Fyfe, John Stoddart Barr, and Joseph Goodwin Tomkinson.

1st Southern General Hospital: the undermentioned to be officers whose services will be available on mobilisation (dated July 3rd, 1908):—To be Lieutenant-Colonels: Robert Saundby, Harry Gilbert Barling, Arthur Foxwell, and Frank Marsh. To be Majors: Robert Michael Simon, William Frederick Haslam, Otto Jackson Kauffman, James Thomas Jackman Morrison, Thomas Sydney Short, Harry Eales, John Douglas Stanley, and Charles Albert Leedham-Green. To be Captains: James William Russell, George Heaton, Joseph George Emanuel, William Billington, Arthur Stanley Barnes, Albert Lucas, Leonard George Joseph Mackey, Leonard Parker Gamgee, William Henry Wynn, Frederick Victor Milward, Frank Barnes, James Martin Young, and Walter James Clarke.

2nd Southern General Hospital: The undermentioned to be officers whose services will be available on mobilisation (dated Sept. 30th, 1908):—To be Lieutenant-Colonels: Robert Shingleton Smith, Edmund Comer Board, John Michell Clarke, and George Munro Smith. To be Majors: Arthur Bancks Prowse, James Swain, George Parker, Charles Alexander Morton, Patrick Watson Williams, Robert Guthrie Poole Lansdown, Cyril Hutchinson Walker, and William Robert Ackland. To be Captains: Francis Henry Edgeworth, John Lacy Firth, John Odery Symes, Thomas Carwardine, James Taylor, Henry Greville Kyle, Carey Franklin Coombs, Harold Frederick Mole, Edward Cecil Williams, Ernest William Hey Groves, John Matthew Fortescue-Brickdale, Edward Hugh Edwards Stack, John Freeman, John Dacre, Joseph John Scammell Lucas, Herbert Elwin Harris, William Cotton, Hedley Hill, and William Stuart Vernon Stock.

5th Southern General Hospital: Surgeon-Major Bonner Harris Mumby from the 3rd (Duke of Connaught's Own) Volunteer Battalion, the Hampshire Regiment, to be Major with precedence as in the Volunteer Force (dated April 1st, 1908).

2nd Western General Hospital: John Kyffin (late Surgeon-Captain, 1st Hampshire Royal Engineers (Volunteers)) to be Captain (dated June 25th, 1908); George Arthur Wright to be Lieutenant-Colonel (dated July 2nd, 1908); Captain and Honorary Major William Thorburn (late 2nd Volunteer Battalion, The Manchester Regiment) from the Retired List, to be Major (dated July 2nd, 1908). The undermentioned to be officers whose services will be available on mobilisation (dated July 2nd, 1908):—To be Lieutenant-Colonels: Graham Steell, Frederick Armitage Southam, Abraham Matthewson Edge, and Alfred Harry Young. To be Majors: Edmund Taylor Milner, Judson Sykes Bury, James Niven, John Edward Platt, Alexander Hill Griffith, Ernest Septimus Reynolds, William Milligan, and Robert Briggs Wild. To be Captains: Alexander Wilson, James Lorrain Smith, Arthur Henry Burgess, Henry Richmond Hutton, John Howson Ray, Richard Thomas Williamson, Evelyn Davison Telford, Ernest Nicholson Cunliffe, Philip Roscoe Wrigley, Charles Herbert Melland, William James Storey Bythell, Frederick Craven Moore, Richard Walter Marsden, Garnett Wright, George Edward Loveday, Albert Ramsbottom, John Wharton, Arthur Sellars, and William Arthur Hooton.

VOLUNTEER CORPS

Royal Garrison Artillery (Volunteers).—1st Aberdeenshire: Surgeon-Captain William A. Macnaughton resigns his commission (dated March 31st, 1908). 1st Banff: Surgeon-Lieutenant-Colonel William Fergusson is granted the honorary rank of Surgeon-Colonel (dated March 30th, 1908). Second Lieutenant Alfred L. Smith resigns his commission (dated March 31st, 1908). Surgeon-Lieutenant-Colonel and Honorary Surgeon-Colonel William Fergusson resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated March 31st, 1908). 1st Fifeshire: Surgeon-Lieutenant William E. Henderson resigns his commission (dated

March 31st, 1908). The Highland: Surgeon-Lieutenant Edward E. Brown resigns his commission (dated March 31st, 1908). 3rd Lancashire: The undermentioned officer resigns his commission (dated March 31st, 1908): Surgeon-Lieutenant Thomas M. Scott. 1st Orkney: Surgeon-Lieutenant George R. C. Russell resigns his commission (dated March 31st, 1908).

Royal Engineers (Volunteers). — 1st Aberdeenshire: Surgeon-Captain Albert Henderson resigns his commission (dated March 31st, 1908). 2nd (Earl of Chester's) Volunteer Battalion, The Cheshire Regiment: Surgeon-Captain Andrew MacLennan resigns his commission (dated March 31st, 1908): 3rd Volunteer Battalion, The Cheshire Regiment: The undermentioned officer resigns his commission (dated March 31st, 1908): Surgeon-Captain Thomas A. Rothwell. 1st Volunteer Battalion, The Essex Regiment: Surgeon-Major St. Clair B. Shadwell is granted the honorary rank of Surgeon-Lieutenant-Colonel (dated March 30th, 1908): Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel St. Clair B. Shadwell resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated March 31st, 1908). 5th Volunteer Battalion, The Durham Light Infantry: Surgeon-Major Andrew A. Abraham is granted the honorary rank of Surgeon-Lieutenant-Colonel (dated March 30th, 1908). Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel Andrew A. Abraham resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated March 31st, 1908). 3rd (Morayshire) Volunteer Battalion, Seaforth Highlanders (Ross-shire Buffs, The Duke of Albany's): Surgeon-Lieutenant John Bruce resigns his commission (dated March 31st, 1908). 4th (Donside Highland) Volunteer Battalion, The Gordon Highlanders: The undermentioned officers resign their commissions (dated March 31st, 1908): Surgeon-Lieutenant William Henry, Surgeon-Lieutenant Phad E. Howie, and Surgeon-Lieutenant Samuel G. Davidson. 3rd (Renfrewshire) Volunteer Battalion, Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Captain Charles Whish resigns his commission (dated March 31st, 1908). 2nd Tower Hamlets Volunteer Rifle Corps: Surgeon-Lieutenant Hubert S. Stockton resigns his commission (dated March 31st, 1908).

TERRITORIAL OFFICERS' DECORATION.

The *London Gazette* of Sept. 29th contains an announcement of the institution of a new decoration for officers of the Territorial Force to be entitled the Territorial Decoration and to consist of an oak wreath in silver, tied with gold and having in the centre the Royal Cipher and Crown in gold. The Decoration is to be suspended on the left breast from a silver oak bar-brooch by a green riband of one and a half inches in width with a yellow stripe down the centre.

Correspondence.

"Audi alteram partem."

THE MEASUREMENT OF "T.R."

To the Editor of THE LANCET.

SIR,—At the risk of being likened to the member of a jury who declared that he had never met 11 more obstinate men than his fellow jurors, may I be permitted to protest against formulating the doses of T.R. in terms of its solid constituents—that is, in fractions of a milligramme of the bacterial matter? Is not "T.R." the designation of a fluid prepared from tubercle bacilli that have already undergone a certain extractive process, and as a fluid is not the dose most conveniently described in terms of its volume? The effect of administering a certain volume of T.R. under given conditions has been definitely ascertained and the percentage composition of its residue on evaporation is not clinically a matter of much importance.

T.R. *was* supposed to contain 1 per cent. of dried bacterial matter, but about a year ago Sir A. E. Wright discerned a handwriting on the wall "*Tekel*—the residue is weighed in the balance and found wanting," the exact deficit being four-fifths of its supposed weight. The solid content only amounted to 0·2 per cent. Some dealers still recognise and use the old imaginary estimate under the designation, "the old nomenclature." If I am right in assuming that "T.R." describes the whole preparation, strictly speaking 1-1000th milligramme means the amount of the fluid that scales that weight, but under "the old nomenclature" it means 100 times that amount, and according to the usage now prevalent, 500 times. (Could there be worse confusion?) 1-1000th *cubic centimetre* T.R. has, and only can have, everywhere and for all, but one meaning.

I am, Sir, yours faithfully,

Oban, Sept. 26th, 1908. W. D. ANDERSON.

THE RELATIONSHIP OF BERI-BERI TO SCURVY.

To the Editor of THE LANCET.

SIR,—Some interesting notes in THE LANCET of June 27th last, p. 1838, by Dr. D. M. Macrae upon scurvy in South Africa make mention of the fact that some observers have spoken of scurvy as associated with a form of beri-beri. I was in North-West Australia during 1890, 1891, and 1892 as medical officer to Messrs. Streeter's Pearling Fleet, Broome being the centre of operations, and an epidemic of beri-beri occurred with symptoms which pointed very strongly to a scorbutic origin. The disease affected chiefly the lugger boys who were shipped from Koepang in the Malay Archipelago, although cases appeared amongst the Japanese pearl-divers. The cooks, Chinamen generally, the West Australian aboriginals, and the "white" men who lived aft in the schooners seemed to be exempt from the disease. The disease manifested itself only when the men had been many months at sea. The vessels were kept clean apparently and well ventilated though they were infested with cockroaches. The opportunity for the patients to be shipped ashore came only when the schooner was loaded up with pearl and had to put into port for transhipment of shell as well as for provisions, which consisted chiefly of rice and tinned meats. The sick formed up in *queue* and shambled into large tents provided for them, where their dietary was altered and included fresh meat, bullock's or kangaroo's flesh and fresh raw lime juice. The majority soon showed signs of improvement and in time were able to return to sea again. Those whose symptoms remained unrelieved always complained of "sakkeet dadda" or "seki dadda." The English translation of this Malayan phrase I am unable to give, but it implied a deep-seated pain or subjective suffocative sensation referable to the epigastric or midsternal regions. I came to regard the finger pointing to this region as the finger of death, for it foreboded with absolute certainty death in a very short time. The signs and symptoms that were obvious enough to the naked eye were the wan and languid appearance of the patients, whose movements were slow and intellects dull, facial expression lost, the swelling of the face and bronzing of the cheeks, while the conjunctivæ took a chocolate hue, with a marked streak of this colour transversely across the sclerotics. The body was apparently well nourished, although the ankles and legs were greatly swollen and œdematous and pitted on pressure, especially over the tibiæ, and were painful, especially at night, over the internal malleoli and inner condyles. A bronzing or pigmentation was visible in the buccal mucous membrane and the gums were reddish and spongy and in some cases overgrown. The tongue was foul, furred, flabby, and indented by the teeth, and the breath had the odour of skimmed milk. In a case of fatal termination the symptoms would be obstinate constipation and vomiting and dyspnœa. Then anasarca developed and the abdomen became prominent. The face and eyes were puffy and in this stage the pupils were contracted. Later, when the patient could scarcely stand, the dyspnœa increased to such an extent as to cause almost continuous moaning and groaning. This hard fight against death ended by a long-drawn sharp groan. Although consciousness was retained up to the last few minutes there were a sluggish mentality and difficulty in answering questions. The eyelids previously to death were ptosic. The ultimate signs of dissolution were tetanic movements all over the body and opisthotony, clonic jerks of the tongue, œsophageal spasm, and last of all a tremor of the muscles of the extremities which seemed to indicate a poisoning of the nerve centres. As to the nature of the poison, well, I will leave that ont, although I am inclined to think of it as a metabolic carbonaceous product. No albumin was found in the

urine in the early stages and the cardiac sounds were muffled, especially the aortic systolic. With treatment these advanced cases got relief, but death usually claimed them after their third relapse. The nerve changes were noticeable in the early stages by their absence.

The post-mortem examination revealed an abundance of yellowish subcutaneous fat, an increase of serous fluid in the serous cavities, more particularly the pleural and pericardial, and in the latter it was richly pigmented. The heart was dilated and flabby, and exhibited fatty degeneration to a marked degree and was loaded with fat, and milk patches were common on the front wall of the left ventricle. The endocardium was pale and fatty. The valves were normal and clots—pale and gelatinous—existed in the auricles. The blood was very fluid and dark and the sternal marrow was soft, oily, and sanguineous. The lungs were congested and the liver was enlarged, very friable, and exhibited chronic venous congestion and fatty changes; no waxy degeneration. Bile was increased and thickened and the gall-bladder walls hypertrophied, and in many cases flint-like facetted calculi were common. The stomach was dilated and there was a great deal of emphysematous fatty tissue around the kidneys; the capsule easily stripped off and on section they showed fatty changes and venous congestion; the Malpighian bodies were prominent, pointing to a condition of parenchymatous nephritis. The spleen was enlarged and fatty and covered all over with fatty peduncular growths, and it cut like cheese, was very dark purple as if severely congested, and the trabeculæ were very prominent and of a pale colour. The pancreas seemed normal.

From the above it will be seen that there are many points in common in beri-beri with scorbutus and post-anæsthetic poisoning or fatty acid intoxication arising from faulty glycogenesis and disordered tissue metabolism.

I am, Sir, yours faithfully,

JAMES MONTEITH, M.B., C.M. Edin.

Oldham, Sept. 25th, 1908.

THE PREVENTION OF TUBERCULOSIS (IRELAND) BILL.

To the Editor of THE LANCET.

SIR,—I have read the letter of Dr. J. C. McWalter in your issue of Sept. 19th, to which I take grave exception and on which I beg to join issue. Dr. McWalter says: "Knowing what I do of the Irish people I believe that the compulsory notification clauses will excite so much suspicion and dread as effectually to undo any good result heretofore obtained from the tuberculosis campaign." That is Dr. McWalter's opinion; but as it is a forecast of what he thinks will happen in the future to a movement which he fully recognises "has done much good," I do not feel bound to vie with him in the rôle of prophet of evil. "The evil which men do lives after them," but in this instance I hope that the good which has been admittedly done by Lady Aberdeen and those who have had the honour and the privilege of working with her in the anti-tuberculosis movement in Ireland will live and extend. Dr. McWalter says that the movement "has a source of weakness in not being controlled by those *in close touch* with the popular party." Is Dr. McWalter entitled to speak for the popular party? Is he *in close touch* with that party? Whom does he desire to place *in control* of the movement which he admits has accomplished so much good? I am of the popular party. So far as I know I am not quite out of touch with it. I know the feelings, the hopes, the fears, the aspirations, aye, even the prejudices of our people as well as Dr. McWalter. I have been north and south and east and west from no selfish or sordid motives. Like others in the movement, I have been willing to sacrifice time and ease and convenience to try and do something towards saving our perishing people. Dr. McWalter tells us of his success in dealing with public boards in Dublin, because they are satisfied that "he is acting unselfishly." "But," he adds, "members of such boards are prone to suspicion; and it is difficult to assure them that a practitioner is entirely unbiassed if he advocates a system *which will put half-crowns in his pocket*, whilst it impales for life the person notified." I protest most strongly against this unworthy and unwarrantable suggestion of Dr. McWalter. It strikes at the honesty and integrity of the members of our profession in Ireland and impugns the motives of those who are acting, as they believe, for the public good without hope of fee or reward. Their conduct is as unselfish and as free from taint of unworthy suspicion as Dr. McWalter's. The question is too urgent, the issue too grave, to be brushed aside in deference to prejudices or suspicions which, if they exist, are ill-founded and baseless, and which educated and enlightened public men like Dr. McWalter should endeavour to combat and overcome, not foment and foster.

I am, Sir, yours faithfully,

MICHAEL F. COX, M.D. R.U.I., F.R.C.P. Irel., M.R.I.A.,
Physician to St. Vincent's Hospital.

Dublin, Sept. 21st, 1908.

To the Editor of THE LANCET.

SIR,—I feel constrained much against my will to break a lance with Dr. McWalter over his attitude towards the above Bill. As a member of a sanitary authority he is no doubt in close touch with the prejudices of those who will be most largely affected and must be therefore fully aware how necessary it is not to do or say or write anything that will strengthen or accentuate those prejudices. The Bill has been framed by the Irish Local Government Board with the obvious desire to interfere as little as possible with the unfortunate subjects of the disease and only those provisions of the Infectious Disease (Prevention) Acts which are absolutely necessary to safeguard both the patients and the public are made applicable to tuberculosis. Whilst the Scottish Local Government Board unhesitatingly expressed its opinion that tuberculosis as an infectious disease could be added to the list of notifiable diseases under the 1889 Act and urged sanitary authorities to make applications to them for that purpose, the English and Irish boards absolutely refused to yield to the supplications of certain of their sanitary authorities on the ground that, if such were done, all the pains and penalties that attend the notification of such diseases as scarlatina, small-pox, and diphtheria would be exercisable against notified cases of tuberculosis. In consequence of the enormous amount of public feeling that has been aroused on this question and in response to the almost universal demand on the part of public representative bodies in Ireland, the Irish Local Government has introduced a Bill so framed as to make tuberculosis a notifiable disease and at the same time avoid even the appearance of harshness or official interference. In order to have a proper knowledge of the existence and prevalence of the disease which is essentially necessary if we are to cope with it successfully the first thing is to get information as to its whereabouts. And this can only be obtained by a system of notification, and under the system formulated in the Bill there is not the slightest excuse for anyone, much less one possessed of the legal acumen and mental calibre of Dr. McWalter, to suggest that there is the least probability of any person being treated as a leper or in any respect avoided either in his home or workshop. The bugbear about expense is also a mere shadow: outside the large cities the half-crowns that will gravitate to the pockets of the medical profession will be inconsiderable and will, I hope, in a few years reach vanishing point. When Dr. McWalter says the anti-tuberculosis movement in Ireland has an inherent source of weakness in not being largely controlled by those in close touch with the popular party I must confess I cannot understand what he means. No similar movement ever had such united and general support. It brought together men and women of all classes and creeds and all shades of politics. It collected on one platform the clergy of all denominations; professional men vied with each other in their efforts to acquire and dispense information, and, in fact, the whole country was alive with enthusiasm. However, Dr. McWalter thinks we should "go gently." We have been going gently for the past 30 years and what has been the result? We are in sanitary matters at least 30 years behind either England or Scotland. The English Public Health Act dates from 1875, the Irish Act from 1878; both are framed on exactly the same lines, and in addition the Irish Act established a complete system of medical officers of health by making all the dispensary doctors health officers for their respective districts. Instead of carrying out the intentions of the Act and calling upon the sanitary authorities to combine and appoint medical superintendent officers of health the then Local Government Board adopted the very

same principle and for the very same reasons of moving gently, with the result that we are as we are. In Ireland we have tremendous leeway to make up in matters pertaining to sanitation, and the progress of tuberculosis in the three countries shows this more than anything else. It might have been different had even a minority of the sanitary authorities had the advantage of the presence and assistance and encouragement of such men as representatives of the ratepayers as Dr. McWalter, but unfortunately they had not, nor are they likely to have, so that it is absolutely hopeless to expect many boards to follow in the wake of the South Dublin board of guardians, and if we are content to adopt this method I would just like to ask the learned doctor how long does he expect it would take to reduce the mortality from tuberculosis from 2·7 to 1·35 and how many people would succumb to it in the meantime?

I am, Sir, yours faithfully,

SAMUEL AGNEW, M.A., M.D. R.U.I.,
Medical Superintendent Officer of Health, Lurgan.

Lurgan, Sept. 21st, 1908.

To the Editor of THE LANCET.

SIR,—"For the love of heaven, gentlemen," said Jowett to some cocksure junior Fellows one day, "conceive it possible that you may be mistaken." With profound humility I submit the advice to Sir John Byers and to the other distinguished men who laud compulsory notification of tuberculosis as the most important step towards ridding Ireland of that plague.

But let me reply to Sir John's points. He inquires, are not the many meetings which have been held under Lady Aberdeen's campaign—in which compulsory notification was commended—a proof of the desire of the country for that step? I deny the conclusion; al the meetings were composed of three classes—those attached in one way or other to the Viceregal Court, some extremists on the medical side who had never studied the economic problem of providing for the phthisical, and a residue of well-meaning people who had never considered what compulsory notification really means. The whole business had such a philanthropic aim, and was indeed so well intended, that nobody cared to raise objections, but when as a result of these mutual admiration meetings an effort is made to pass penal legislation for a whole country it is time to protest.

Sir John Byers refers me to the experience of compulsory notification at Sheffield, New York, and elsewhere. I am not sure if Sir John was at the Sheffield meeting of the British Medical Association, but everyone could see that compulsory notification may be an excellent thing in a city where a whole population works together in crowded factories, and a doubtful experiment for a whole country where the conditions are absolutely different. If Sir John can point out any entire country where compulsory notification of phthisis prevails and causes no hardship we must be impressed by it, but the example of an odd city goes for nothing. The fact that in 1864 the Irish death-rate from tuberculosis was the lowest in the three kingdoms, although no sanitary precautions were heard of, whereas now, after a quarter of a century's sanitary legislation, it is the highest, gives one to think furiously about the net result of these measures in actual practice.

I am, Sir, yours faithfully,

Dublin, Sept. 27th, 1908. J. C. MCWALTER.

"SENSATIONAL JOURNALISM."

To the Editor of THE LANCET.

SIR,—The prominence of "tragic deaths," "murders," and "suicides" in our daily papers is appalling. Every day when one picks up the morning newspaper and opens it at the summary and leading articles one's eye cannot fail to be attracted by the large letters on the same page stating reports as above. Such reading, to those of nervous temperament, weak-minded, and neurasthenic, is more than harmful, as it dictates to them the ways and means of acting likewise, and many, I think, have knowledge put into their minds upon which they act sooner or later.

When I was a lad in 1870–1880, or a quarter of a century ago, such reports were seldom seen or heard of. Now such statements are passed from mouth to mouth, in the motor, train, or tramcar, and appear to be the topic of the day and hour. Could not these horrors be hidden away discreetly on another page and many details omitted altogether? Surely the medical profession ought to try to see what can be done to rectify matters, thereby helping the weak-minded and preventing atrocities being committed. It is as much the doctor's duty to prevent, when possible, sickness as it is to relieve and cure it. I write from experience, as lately patients of mine on reading the papers, and it is difficult not to let them get them, have been advanced from the subacute to acute stage of suicidal mania.

I am, Sir, yours faithfully,

Buxton, Sept. 25th, 1908. JOHN MCOSCAR, L.R.C.P. Lond.

RUPTURE OF THE LIGAMENTUM PATELLÆ.

To the Editor of THE LANCET.

SIR,—On looking over the last few numbers of THE LANCET I see that in the issue dated Sept. 12th you have an annotation on two cases of rupture of the ligamentum patellæ, which is followed, in the issue of Sept. 19th, by a letter from a Leicester correspondent reporting another case. These have prompted me to send you notes of the following case which occurred on board of a mail steamer of which I was surgeon at the time.

The patient was a man aged 23 years. On June 19th, 1908, one day out from Punta Arenas, he slipped on the wet deck in a heavy seaway and fell, striking his left knee, he thought, against a steam-pipe. He said that he had a good deal of pain at the time but was able to get up and limp slowly along the deck. He did not come to me nor send for me till the next day, when he came to the dispensary and gave me the above history. His complaint was that "he could not straighten his knee." He did not complain of pain. On examining him, I found that there was a moderate degree of swelling over the front of the knee-joint; the swelling was not tense, but was tender, though only slightly. The tubercle of the tibia was uninjured. The patella was also apparently uninjured, but was very high up. It was freely moveable and movement did not cause pain. Below it there was a gap, which was partly filled up by the swelling over the front of the joint. He was absolutely unable to extend the leg. I made a diagnosis of rupture of the ligamentum patellæ and put up the limb on a posterior splint, with downward traction on the patella and a firm bandage over the joint. On our arrival at Valparaiso on June 26th I sent him ashore to the Hospital San Juan de Dios, where he was under the care of Dr. Page. On June 30th Dr. Page operated, turning up a flap in front of the joint. The ligamentum patellæ was found to be almost completely torn across, only a few fibres remaining undivided, and these showed evidences of having been stretched. The torn ends were approximated by strong chromicised catgut sutures, and the limb was put up in the extended position on a posterior splint. Unfortunately, I am not able to give any particulars of the result of the operation, as the wound had not been dressed by the time we sailed from Valparaiso, and I have not yet heard that the patient has returned to England. If it will be of interest to your readers, however, I will be glad to communicate the result as soon as I learn what it is.

I regarded the rupture of the ligamentum patellæ as being due to the sudden, forcible contraction of the quadriceps extensor and not to a blow from the steam-pipe. This opinion was shared by Dr. Page and Dr. J. C. Atkinson, as at the operation there were no evidences of bruising of the skin.—I am, Sir, yours faithfully,

South Shields, Sept. 27th, 1908. A. H. MACCOLL ROBERTSON.

MEDICAL DEFENCE UNIONS.

To the Editor of THE LANCET.

SIR,—In reply to the letter of "Practitioner" published in your issue dated Sept. 26th may I be allowed to state that there is one Medical Defence Union in England, of which I am general secretary, with offices at 4, Trafalgar-square, W.C., and that I shall be pleased if he will communicate with me and I will forward him full particulars. There is also the "London and Counties Medical Protection Society," Dr. Hugh Woods secretary, doing similar work, the office of which company is in Craven-street, Strand.

In respect to insurance offices covering similar ground I

know of none, as the work both of the Protection Society and of the Union includes not only defence against actions for alleged negligence but advice and assistance in all matters pertaining to the medical profession, illustrations of which can be found in the annual report of either society. If we were to confine our duties solely to cases of alleged negligence such as insurance companies may possibly undertake, a very large proportion of our assistance to the members would cease, to their great disadvantage. The scope of our work is far-reaching and would be impossible to other than purely medical professional organisations with many years' experience and with an expert staff.

I am, Sir, yours faithfully,

A. G. BATEMAN,
General Secretary.

Medical Defence Union, 4, Trafalgar-square, London, W.C., Sept. 26th, 1908.

To the Editor of THE LANCET.

SIR,—In reply to "Practitioner's" inquiry in your current issue there are two well-known medical defence societies, one with offices at 4, Trafalgar-square, W.C., and the other, The London and Counties Medical Protection Society, of 31, Craven-street, Strand. Both of these societies undertake to defend members in actions for malpraxis but contribute nothing towards damages arising from such actions in cases of adverse verdicts. *Re* "Practitioner's" second query, the policy he requires can be obtained from Messrs. Aked and Aked, 43, Warwick-street, S.W., who are, I believe, the sole agents.

I am, Sir, yours faithfully,

VINCENT P. NORMAN, L.M.S.S.A. (Lond.).

Stepney Green, E., Sept. 29th, 1908.

AMYL NITRITE IN UTERINE HÆMORRHAGE.

To the Editor of THE LANCET.

SIR,—It would be most useful to know if in uterine hæmorrhage nitroglycerine could be given by the mouth instead of inhaling amyl nitrite, as nitroglycerine is said to be more persistent and slower in its action.

I am, Sir, yours faithfully,

G. P.

Sept. 24th, 1908.

COLLES'S FRACTURE.

To the Editor of THE LANCET.

SIR,—To the *Journal of the American Medical Association* some weeks ago Dr. L. W. Ely of New York contributed a paper on Colles's fracture. It is important to bear in mind that Colles described a very definite fracture with a definite displacement and therefore the title Colles's fracture should be limited to this variety or it should be given up entirely. Dr. Ely's paper is of great interest in that it endeavours to explain the mode of production of the fracture from the structure of the bone. He appears to consider that fracture of the styloid process of the ulna is an essential accompaniment, but skiagrams, which have taught us so much about Colles's fracture, tell us that the lesion of the ulna, though frequent, is not essential. Dr. Ely also condemns strongly the idea that the impaction should not be interfered with and I agree with him, but surely nowadays no one advances the opinion which he attacks.

It may be interesting to recall the exact circumstances in which Colles's fracture received the name which for nearly a century has been given to a certain form of fracture in the neighbourhood of the lower end of the radius. Dr. A. Colles, who was one of the professors of anatomy and surgery in the Royal College of Surgeons in Ireland, wrote a short article which appeared in the April number of the *Edinburgh Medical and Surgical Journal* of the year 1814, entitled "On the Fracture of the Carpal Extremity of the Radius," and in it is given for the first time a very clear and exact account of that fracture which is still called "Colles's fracture." Colles describes the fracture as occurring about an inch and a half above the carpal extremity of the radius, and he mentions the displacement backwards of the carpus, combined with the tilting backwards of the lower extremity of the radius. He describes the method of reduction and the great tendency to recurrence which exists. It may reasonably be asked, "Was not this fracture recognised earlier?" Doubtless it was, but for the most part it is probable that the cases of this form of fracture were diagnosed as dislocations of the wrist or perhaps as examples of Dessault's dislocation of the lower end of the radius.

I am, Sir, yours faithfully,

F.R.C.S.

Sept. 25th, 1908.

THE PRESENT CONDITION OF PHARMACY.

To the Editor of THE LANCET.

SIR,—In reading your leading article published last week under the above heading there came prominently to my mind the contrast between the relationships existing in two seaside towns in the West of England between their medical practitioners and their pharmacists. In one it is (or was two years back) a state of antagonism, in the other a state of coöperation. In illustration of the former case I need only quote the grievance of a prominent pharmaceutical chemist who complained to me that a certain practitioner not only dispensed his own medicines but that he undersold him by supplying elastic bandages to his patients at a bare margin of profit. But the object of this letter is to heal and not to fret a sore, so I will pass to the practice obtaining in the other town. In that place an arrangement has been made between several medical men who formerly "did their own dispensing" and a pharmaceutical chemist, by which the former are relieved of all that irksome business, whilst the latter comes by much more of his legitimate custom than he could hope to under the old system. The arrangement in question is based on the well-known fact that patients who pay 3*s.* 6*d.* or 5*s.* for advice do not like to have to pay for their medicine too. The medical man writes his prescription which the patient takes to the chemist in question, the latter makes it up, gives him the medicine, and charges the medical man from 5*d.* to 6*d.* a bottle for it. This simply means that his fee for consultation, including medicine, is 6*d.* more than for advice without medicine. The great point is that the patient only pays one charge instead of two; incidentally, he probably gets more elegant pharmacy than in the days when the medical man dispensed his own medicines, the evening labours of the practitioner are greatly lightened, whilst the chemist earns far more in sixpences than he used to earn in eighteenpences. The whole thing is perfectly fair and aboveboard. There is no question of "secret commissions," for the system is fully explained to the patients. The practice may be general in small towns, for which it is specially suitable, but I am constrained to mention it by the memory of that other place where medicine and her chief handmaiden are (or were) at such unhappy loggerheads.

I am, Sir, yours faithfully,

LIVE AND LET LIVE.

Sept. 29th, 1908.

THE SECOND CONGRESS OF THE INTERNATIONAL SOCIETY OF SURGERY AT BRUSSELS.

(FROM OUR SPECIAL CORRESPONDENTS.)

(*Continued from p. 975.*)

THREE years ago the International Society of Surgery decided to discuss in 1908 Cancer, the Surgery of the Liver, Anæsthesia, and Hernia.

Cancer.

The subject of cancer was taken first and a series of formal reports was in the hands of the members at the time of the meeting. The first of these reports was by Dr. ROSWELL PARK (Buffalo) who maintained that cancer was essentially infective and that the disease must therefore be treated on the same lines as a filth disease. Cremation should supersede earth burial after death from cancer. All soiled dressings and discharges should be destroyed by fire, whilst rooms and even houses inhabited by cancer patients should be most thoroughly disinfected, both during illness and after death. As regards the individual Dr. Roswell Park held cancer to be essentially a local infection at first, generalisation taking place quickly, though the rate of spreading varied wonderfully in different individuals and with different forms of cancer. The treatment, therefore, was bound up with early

recognition of the disease and for the present at least it was entirely surgical.

Dr. GIRARD (Geneva) discussed the Pathogenesis of Cancer, pointing out that it was very frequently seen in some countries, less commonly in others. The statistics of mortality in Switzerland (about 4000 cases a year) led him to think that there was the possibility of a connexion between cancer and alterations in the function of the thyroid. Where goitre was rare, as in the Jura, carcinoma was rare and *vice versâ*. Dr. Girard said that he had examined 2000 patients above the age of 30 years suffering from different diseases to discover whether or not they had goitre. The proportion of patients with goitre and cancer was more than twice as great as those who had cancer and no goitre. Tuberculosis, on the other hand, was rare in connexion with goitre.

Professor VON BONSDORFF (Helsingfors) reported on the Treatment of Cancer of the Lips, advocating the most radical measures for removal of the disease at the earliest opportunity.—Dr. MORESTIN (Paris), Dr. JOSÉ RIBEIRA Y SANS (Madrid), and Professor DOLLINGER (Budapest) took part in the discussion on Professor von Bonsdorff's paper.

Dr. J. COLLINS WARREN presented an analysis of 172 cases of Cancer of the Mouth and Tongue which had been treated at the Massachusetts General Hospital. He stated his belief that cancer of the mouth and tongue was a local disease limited to the tissues immediately surrounding the point of origin and to the neighbouring lymphatic system. The modern operative treatment involved the preliminary treatment of the cavity of the mouth, protection of the respiratory tract, removal of the primary lesion with at least a margin of one inch of healthy tissue, and thorough dissection of the lymphatic-bearing tissues of the anterior cervical triangle on one or both sides as a routine method of procedure.

Dr. GLÜCK (Berlin) discussed the Treatment of Cancer of the Nasal Fossæ, Pharynx, and Larynx. He advocated suture of the divided trachea to the skin of the neck in cases of total laryngectomy and laryngoplasty when only a portion of the larynx was removed, whilst in all other operations where the larynx was untouched "Rose's position" with temporary compression of the wound was sufficient to protect the lungs against the danger of inhalation pneumonia. Laryngectomy he performed in a single operation, and the most radical methods were deemed to be the best. Dr. Glück showed three patients who had undergone the operation of laryngectomy and demonstrated his "rubber-funnel" apparatus as well as the artificial larynx which he employed after extensive operations. The patients shown spoke well and so audibly that one could be heard throughout the large meeting room which had not very good acoustic properties.—Mr. H. T. BUTLIN (London), Dr. DURAND (Lyons), and Dr. MORESTIN took part in the discussion.

Mr. BUTLIN presented two valuable papers—the first on the Results of Operations for Carcinoma of the Tongue, with an Analysis of 197 Cases; the second on the Results of Operations for Cancer of the Larynx, with an Analysis of 37 Cases. In each case he laid especial stress on the necessity for the routine removal of the lymphatic glands in the neighbourhood of the cancerous organ even before the glands were obviously enlarged.

Mr. HENRY MORRIS's paper upon the Treatment of Inoperable Cancer, which was read at this meeting, is published at length in our columns this week (p. 997).

Surgery of the Liver.

The second morning of the Congress was devoted to a discussion of the Surgery of the Liver under the broad headings of Gall-stones, Inflammations, including Cirrhosis and Abscess, Angiocholitis and Tumours.

Dr. HANS KEHR (Halberstadt) introduced the discussion on gall-stones in a lengthy paper containing much valuable material. He suggested that the points to be discussed should be: (1) In what cases of cholelithiasis was an operation indicated? (2) Which was the preferable operation when there were stones in the gall-bladder? and (3) In stones in the common bile-duct should choledochotomy with suture or drainage of the hepatic duct be performed? The answers which he supplied were as follows. The early operation for cholelithiasis recommended by Riedel was not advisable, but in acute and chronic empyema of the gall-bladder and in chronic obstruction of the common bile-duct an operation must be performed. When severe and continuous biliary colic was present an operation was needed if the pain interfered with the patient's work. For stones in the gall-bladder cholecystendysis was not good, cholecystostomy was rarely suitable, and the best operation was cholecystectomy. When there was a calculus in the gall-bladder Dr. Kehr preferred choledochotomy with subsequent drainage to choledochotomy with immediate suture. As to the results which he obtained, where no complication existed the death-rate was only 2·3 per cent.; when at the same time an operation needed to be performed on the stomach, intestine, liver, or pancreas, the mortality might be as great as 20 per cent.; while if malignant disease was present it might be even 75 per cent.

Mr. B. G. A. MOYNIHAN (Leeds) stated that he differed from many of the observations of Dr. Kehr. He preferred to open the gall-bladder rather than to remove it, and to make a small incision through the abdominal walls rather than a flap. It was better not to use gauze. The necessity for large operations was reduced to a minimum when due attention was paid to diagnosis in the early stages. Hitherto patients had been allowed to suffer until serious pathological disorganisation had taken place before they were brought to the surgeon for treatment.

The discussion was continued by Dr. BAKÈS (Trebitsch, Moravia), Professor HARTMANN (Paris), Dr. FINK (Carlsbad), and Professor STEINTHAL (Stuttgart).—Dr. BAKÈS explained an extensive plastic operation in which he performed a choledocho-jejunostomy and demonstrated a special form of cystoscope for use in operations on the gall-bladder.—Professor STEINTHAL agreed with Mr. Moynihan in preferring incision of the gall-bladder to its removal in the more simple cases.

Dr. PEUGNIEZ (Amiens) agreed that splenectomy or other interference with the splenic functions was sometimes useful in cases of cirrhosis of the liver and gave an account of cases in which he had obtained successful results.

Professor C. F. A. KOCH (Groningen) contributed an important paper on the Surgical Treatment of Cirrhosis of the Liver. He discussed the subject carefully and he came to the conclusions that Talma's operation—the suturing of the omentum to the anterior abdominal wall—was capable of leading to the recovery of atrophic hepatic cirrhosis, and that the earlier the operation was done the better, for in advanced cases it was dangerous. The operation was successful in about 30 per cent. of the cases, though probably the hepatic disease was not modified by the operation. When fixation of the omentum failed splenopexy might sometimes succeed. In hypertrophic cirrhosis drainage of the gall-bladder was recommended.

SOME DISCURSIVE REMARKS ON THE REARING OF CHILDREN IN LONDON.

(BY A SPECIAL CORRESPONDENT.)

II.[1]

NO PROVISION YET IN STEPNEY.—LIFE IN ROTHERHITHE.—THE BABIES' INSTITUTE.—HOUSING OF THE POOR IN ROTHERHITHE.

THE schools for mothers in Chelsea and St. Pancras are the only ones that are actually associated in a systematic way with arrangements for the feeding in a charitable or semi-charitable manner of pregnant or nursing females. A school for mothers has been opened recently in Fulham for the purpose of instructing parents with infants in arms in the feeding, management, and clothing of their offspring. The school is an adjunct to the Fulham Day Nursery and does good work, the scope of which might be much extended if more money was forthcoming. At Rotherhithe in connexion with the Bermondsey Settlement, efforts in a similar direction are being made, and here in certain circumstances meals are given to nursing mothers. Stepney was the next district to which I paid a visit, having been told that some work of a like nature to that so usefully set going in Chelsea was in progress there. But the movement in Stepney seems still quite in the air. The borough council has declined to appoint a health visitor, and although up to last year a voluntary health visitor was at work under the supervision of

[1] No. I. was published in THE LANCET of Sept. 26th, 1908, p. 969.

Dr. S. B. Atkinson, since that date her services have ceased. A large baby show which has been held recently in the centre of Stepney is regarded as affording a good opportunity for starting a motherhood bureau or some centre whence information on all matters of infantile hygiene could be readily obtained. It will be a valuable thing for the community if this expectation is realised; at present the poor nursing mother of Stepney gets none of the assistance which might be so valuable to her.

I now went on to Rotherhithe, and nowhere can conditions be found more favourable for studying the problem of the rearing of poor children. Rotherhithe, which once was prosperous, has long since fallen from its high estate. Much of its trade has departed, though its position on the bank of the Thames still necessitates the employment of a considerable number of dock workers. Unfortunately, the supply largely exceeds the demand, and many men can only obtain casual employment. Their wives and families are in a condition of continual poverty. The brunt of the physical suffering, the natural hunger, is borne, of course, by the women and children, and the women suffer even more severely than the children because of their ready self-sacrifice of themselves. It is the ordinary sequence of events that a man obtains a few days' employment, having had no work for a week or two. When he procures this casual job his wife is able to obtain credit and food is secured, of which the man must consume by far the largest portion or he cannot do his work. The woman in most instances stints herself to a bare subsistence for the sake of the children. The woman exists upon the minimum of food that will support existence, and if she happens to be pregnant it can be conceived that the chances for the offspring are very black. It is in a locality like Rotherhithe that expectant and nursing mothers of the poorer class especially need nourishment, and none of the dread lest pauperisation by charity should lead to loss of self-respect need enter into the question. Women who starve themselves for their children do not lose moral fibre because they are helped to feed those children, and a too severe attitude of organised charity would be out of place in Rotherhithe. The Bermondsey Settlement, the headquarters of which are at St. George's House, Bermondsey, but which has its women's house and its women and children's house in Rotherhithe, has attempted to grapple with some of the difficulties which young mothers meet with there. Miss Simmons is at the head of the women's work. At St. George's House, Bermondsey, babies' breakfasts are given through the winter up to May and bread and milk is given to children too young to come under the school feeding system and too troublesome to be cared for at the same time as the other children. In connexion with the Settlement what is known as a Babies' Institute has been established. A good-sized house, known as Beatrice House, has been hired in Rotherhithe in which on certain days of the week mothers' meetings are held and advice is given by competent women in regard to the bringing up of young children. At this house on one day of the week infants are inspected and weighed. A nurse and two ladies connected with the Settlement supervise these proceedings and a medical man attends at intervals to inspect the infants medically, to give advice, and to recommend treatment when necessary. Pamphlets and leaflets containing instructions as to the proper mode of rearing infants are distributed, setting forth the aim of the institute and the principles of hygiene to be followed in the bringing up of infants. To help mothers, especially young mothers, to prepare for the birth of children, and to take efficient care of themselves and the baby, both before it comes into the world and for the first year of its life, a provident maternity club is to be established, and it is intended, if sufficient support can be obtained, to adopt to some extent the system of feeding expectant and nursing mothers. This is done already on a very small scale, and all who know the conditions hope that the movement may spread in this poverty-stricken neighbourhood. I was present at one of the mothers' meetings, at which babies were inspected and weighed. Both mothers and infants as a lot were anæmic and ill-nourished. The women took, as usual, the keenest interest in the weighing of the babies and the spirit of emulation which is invariably aroused in these circumstances soon began to prevail among them. The increase of weight of their respective offspring became a matter of personal dignity to themselves. Also, they seemed to pay great and grateful attention to the advice given to them.

The obviously forlorn and ill-fed appearance of many of the women in Rotherhithe made me wish to see them in their homes. With the assistance of a Poor-law district medical officer for Rotherhithe, Dr. B. A. Richmond, who has lived in the neighbourhood for some time and who knows the houses of the poor well, I was able to witness the life led by the mother at home. The houses, with the exception of the model dwellings, are old, small, ill-lighted, and possess many sanitary defects. The first house into which my conductor took me was situated in a narrow side street and consisted on the ground floor of a low-ceilinged, badly lighted room in front, not more than 12 feet square, opening into which was another room, windowless and just large enough to contain a truckle bed in which a girl slept. There were two very small rooms upstairs in which the remainder of the family, comprising man and wife and three children, slept. The food of the family was kept, in default of other accommodation, in a small cupboard in the dirty and stuffy front room, and the provision for cooking it was a gas stove at the end of the narrow entrance passage and in close proximity to the water-closet. The street was ill-paved and narrow, and the other houses, which I daresay are among the oldest in Rotherhithe, are much like the one described, though a few have outside yards, allowing a little more space for cooking and sanitary arrangements. In an adjoining street was a house to which I was conducted containing two rooms on the ground floor and two on the upper floor. In the front room the greater part was occupied by a large wooden bedstead, for, of course, the more numerous the family the larger the bedstead, while, with less obvious connexion, the larger the bedstead the smaller the room. In bed here was a woman who had been confined a few days before, making her eighth child, but in this tiny house two nearly full-grown girl lodgers also received accommodation, so that of the two small rooms upstairs one was occupied by six girls and the other by three boys. There was an outside yard in which was the closet and in another part of the yard a cupboard in which the food was kept. The people of this house were not particularly poor and the overcrowding, which constituted a menace to their health, was not really necessitated by their circumstances. The rent of the house was 8*s.* 6*d.* per week. The next houses which I visited were situated near the river and were more distinctly reminiscent of Rotherhithe as a riparian suburb. The first house was large with a long passage running its full length and leading into a yard. It contained seven rooms, most of them panelled, all of them inconvenient and ill-lighted, and two of them which were used as bedrooms with no outside light whatever. The rent of this house was 11*s.* 6*d.* per week and it was filled with lodgers. The food was kept in a cupboard in the yard. A second house was of a similar description, with dark short stairways leading from room to room. But here also there was an outside yard with storeroom for food and a closet. This house had as inmates a man, wife, and family of four, and several lodgers. Another house which had been undoubtedly in days past the mansion of a family of some position and which was now used as a lodging-house, swarmed with children and was grimy beyond description. In the last house which I shall describe, situated in a narrow lane not far from the river, a woman under 30 had been confined recently with her sixth child, the other five children being alive, the general conditions were even worse. The house was small and disgustingly filthy. In a diminutive front room, with fire burning and window tightly closed and atmosphere absolutely foul, containing a very large bedstead, sat the woman with her last baby in her arms, and on the bed were two half-naked youngsters. The woman had no one to assist her, and in order to attend, after a fashion, to her large young family, was compelled not only to get up before she should rightly have left her bed but to do what cooking her means allowed her to have. Probably the food was kept under her bed, for this appears to be no very uncommon incident where receptacles are practically absent, and she could not have placed it far from her because of her condition. I inspected many other houses, but I think I have said sufficient to show that in Rotherhithe there is ample scope for the employment of many health visitors. I am sure that much, very much, could be done,

and at a comparatively small outlay of money, for these poor people by some systematic scheme of visitation, but, of course, no schools for mothers could ever work results to counteract the evils of such housing and terrible poverty. Perhaps it is due to the hopeless feeling that to feed a few poor pregnant women would mean so little in the presence of so much misery that no steps in this direction either have been taken. By way of contrast, I was taken to inspect two blocks of model dwellings, one built by county council and the other by municipal enterprise. The Rotherhithe buildings are good specimens of model dwellings of the usual type. Dr. Richmond informed me of a quite interesting fact—that the infant mortality under one year of age is higher in the model dwelling than in ordinary houses. He accounted for it thus, that in the model dwellings the food has to be kept inside the house, while in the houses there is often some sort of a back yard where it is possible to store food in something like a reasonable manner.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS AT WASHINGTON.

(FROM OUR SPECIAL SANITARY COMMISSIONER.)

In Search of a Programme.—Stringent Legislation against Tuberculosis in the State of New York.—The Energetic and Successful Propaganda against Tuberculosis.—Exhibitions, Lectures, and the Growth of Local Organisations.

New York, Sept. 15th.

FOR the moment it would seem as if the whereabouts of the Congress are somewhat uncertain. Though this is to be the Washington Congress, at present the chief centre for information is in New York and the proceedings are to commence next week at Philadelphia! It will work out satisfactorily in the long run there is no doubt, though at present all the tickets and badges and much of the correspondence are not at Washington but at New York. Therefore on landing the best thing to do was to seek out Dr. Linsly R. Williams, chairman of the New York entertainment committee, at the offices of the National Association for the Study and Prevention of Tuberculosis situated in a huge beehive known as 105, East Twenty-second-street. The particular cell of the hive in question that interests the Congress bears the number 515, showing how numerous are the bees and cells in this hive. Here I called a few days ago and was most courteously received, then a bronze badge was conferred on me and I was told that none of the programmes were ready except a small handbill just received from Philadelphia. This announces a business meeting at 2 P.M. on Sept. 24th. On the following day at the Horticultural Hall there will be lectures that promise to be interesting and a closing meeting is fixed for Saturday afternoon. After that presumably the members are to proceed to Washington and to devote the week from Sept. 28th to Oct. 4th to discussing the real business of the Congress. No programme indicates as yet what is to be done or what will happen at Baltimore and at Boston, which towns are also to be visited. But yesterday afternoon the one and only copy of the New York programme was triumphantly brought to the above-mentioned office; and I think I was the very first person, with the exception of the organisers, to see this precious, and at that time unique, document. I hasten to transcribe its contents. At the entrance of the celebrated sky-scraper, the "Flat Iron," as it is called, we are to meet at 9 A.M. on Thursday, Oct. 8th, and be shown some of the town buildings. In the city hall the Mayor of New York will welcome the Congress. Then boats are to take the members to visit the quarantine station and the Sea-breeze Hospital for surgical tuberculosis in children. This latter is the first institution of the sort established in the United States. In the evening there will be numerous private dinner parties given to members and a lecture at the Academy of Medicine on Tuberculosis of the Heart and Blood-vessels by Dr. Martinez Vargas. On Friday the members are to visit the Ellis Island Immigration Station, the Bellevue Hospital, the Tuberculosis Boat, the Rockefeller Institute, and other places, ending in the evening at the Hippodrome. On the 10th there will be an all-day trip to the Loomis Sanatorium at Liberty and trips to other comparatively distant sanatoriums. After this the Congress and its excursions conclude. It is very unfortunate that all this could not have been arranged at least three months ago, or better still, some six months ago, so that the different countries might have been able to send information as to the persons who would be likely to participate in these various trips.

There is no doubt that much interest will be felt in regard to what so enterprising a country as America has been able to do in the great struggle against tuberculosis. The programme prepared for the members of the Congress when at New York will in any case afford them opportunity of judging what has been done and planned for the State of New York. The population of that State is about 8,000,000, and, counting municipal institutions and private charities, and paying and free sanatoriums, there are in all 3556 beds available for the treatment of tuberculosis in sanatoriums or special hospitals. This number will be greatly increased in a few years by the action that has now been taken by the local authorities. The New York State last year passed a very stringent Anti-tuberculosis Law and the State Board of Health has power to see that various enactments are really carried out by all the small local governing bodies.

As an example of the stringency of this new law, it may be mentioned that the notification even of incipient cases of tuberculosis is rendered obligatory. This has to be done by the attendant medical practitioner, but the records must be kept strictly private and are therefore not open to general inspection. When a patient leaves his dwelling it must be disinfected before it can be re-occupied. This also must be done within 24 hours. Persons with tuberculosis who spit in public places may be fined £2. Physicians who fail to report cases shall be deemed guilty of a misdemeanour and fined not more than £20 and not less than £1. Some fears are entertained that public opinion is not yet ripe for such a law. The State of New Jersey has a law fining medical men £10 if they fail to notify cases, and the result is that magistrates will not impose so large a penalty. Therefore, and in the hope of obtaining convictions, the New York law makes the penalty as low as £1.

There is, I am assured, a very great progress in public opinion on these questions. The sanitary reformers were agreeably surprised by the facility with which the New York legislature adopted the new Anti-tuberculosis Law. The fact is that the National Association for the Study and Prevention of Tuberculosis has been very active and has brought great pressure to bear on public opinion during the last few years. It has worked hard to obtain the support of the press and this has often been given very readily. The greatest enterprise is the organisation of travelling exhibitions. From Toronto to Mexico these exhibitions have attracted thousands of people. Some 20 of the largest cities in the United States have thus been visited. Remaining two or three weeks in each town the exhibition supplies a great deal of matter to the local press. Then there are posters on the walls, and handbills and literature distributed on all sides, together with a series of lectures. All this is done in a manner likely to attract the poorest people. No technical terms are used, but everything is contrived so as to attract and to interest the general mass of the population. This was started without any money but it brought in money and many gifts. Then another very important result is that when these exhibitions are held in towns they generally end by bringing about the foundation of a local branch of the National Association. These local branches have become in many instances strong enough to finance their local efforts; all that they need is material—objects to exhibit—and general advice from the central organisation. Yet the holding of an exhibition means some expenditure. According to the importance of the town and of the exhibition and the amount of paid publicity given, an exhibition for the prevention of tuberculosis has cost from £60 to £400. It is calculated that at least 700,000 visitors have been attracted to these exhibitions. Sometimes the result is not only the forming of a local committee to deal with the prevention of tuberculosis but also a permanent local exhibition has been established in some towns. This is notably the case in New York, Boston, Wisconsin, Minnesota, Chicago, &c. For the moment, however, many of these local exhibitions are closed, as they have sent some of their best specimens to the great Congress Exhibition of Washington where they will remain for three weeks. Naturally such exhibitions are free. There is no attempt to make money out of them. Often the lectures are illustrated with lantern slides and

there is someone present at the exhibition to take parties round and to explain. Thus an immense educational work is done.

There are now no less than 195 State or local associations for the prevention of tuberculosis. To show how quickly the movement has grown it suffices to consider the following few figures. At the commencement of 1905 there were only 24 associations for the prevention of tuberculosis throughout the whole of the United States and then 12 new ones were created. In 1906 25 new associations were started. In 1907 the doubling process continued, since in that year 49 new organisations sprang into existence. But the first seven months of the present year beat all former records by creating 85 new associations. The rapidity of the increase shows the popularity of the cause and the ability with which it has been advocated. As already remarked, the object is purely educational and one of the difficulties has been to check the over-zealous. Others seek to advertise themselves rather than to make themselves really useful, so that some associations have been formed which it was thought wiser not to recognise. The committee governing the National Association has been carefully selected from among eminent medical men and some laymen who have had great experience in such matters and are fully cognisant of the sort of difficulties likely to arise. Dr. Livingston Farrand, who has been very active in this organising work and who supplied me with much of this information, will give further details at Washington and the foreign members will be profitably interested in the practical information thus forthcoming. There is a book also about to appear, of which I have some proof sheets, containing a complete list, accompanied with some practical details, of every sanatorium and hospital in the whole of the United States specially intended for tuberculous patients. This will be a very useful publication.

RECENT OUTBREAKS OF PLAGUE IN THE NEAR EAST.

(BY THE BRITISH DELEGATE TO THE CONSTANTINOPLE BOARD OF HEALTH.)

DURING the past few months an epidemic of plague of some severity has been prevailing at Bagdad. The first case of the disease there was seen by the health officer of the town on May 8th last. The patient, a Jew, was said to have been ill during the eight preceding days. Other cases were observed at the same time, but hitherto no light has been thrown on the source from which the infection was introduced into Bagdad. The further course of the outbreak has been as follows:—

	Cases.	Deaths.	Found dead.
Between May 8th and 23rd	20	6	2
In the week ending May 30th	7	7	2
,, ,, ,, June 6th	10	7	2
,, ,, ,, ,, 13th	10	6	3
,, ,, ,, ,, 20th	8	4	3
,, ,, ,, ,, 27th	13	6	2
,, ,, ,, July 4th	15	6	2
,, ,, ,, ,, 11th	8	8	3
,, ,, ,, ,, 18th	4	3	1
,, ,, ,, ,, 25th	6	5	3
,, ,, ,, August 1st	3	2	0
,, ,, ,, ,, 8th	1	2	0
,, ,, ,, ,, 15th	3	2	1
,, ,, ,, ,, 22nd	2	2	2
,, ,, ,, ,, 29th	1	1	1

The totals up to the last-named date were 111 cases with 67 deaths. The high proportion of cases "found dead" cannot escape notice. The written reports from Bagdad tend to show that the measures imposed by the local authorities have not been very adequately carried out. In the early days of the outbreak it was stated that a considerable number of dead rats had been found in the town, and the diagnosis of plague, both in human beings and in rats, was confirmed bacteriologically. Various measures were imposed to prevent the infection spreading outside Bagdad, the most important of which were: a medical inspection of passengers leaving the town by river or road, an additional medical inspection of arrivals in Kerbela (the Shiah Holy City), the prohibition of the transport of corpses from Bagdad to the Shiah Holy Cities of Kerbela and Nedjef, and of the burial of bodies in the interior of the Kiazimieh mosque. Medical visits were also imposed on travellers by the river steamers from Bagdad. The outbreak seems now to be approaching extinction.

The outbreak of plague in Jeddah came to an end in the month of March last. Subsequently to the returns quoted in my letter which appeared in THE LANCET of April 11th (p. 1110) only a single death from the disease was observed there—on March 30th. In Yanbo, on the other hand, the outbreak lasted longer. The following figures are in continuation of those quoted in the letter just referred to:—

	Cases.	Deaths.
From March 12th to March 18th	19	19
,, ,, 19th ,, ,, 21st	6	6
,, ,, 22nd ,, ,, 25th	10	10
,, ,, 26th ,, April 5th	11	11
,, April 6th ,, ,, 14th	2	2
,, ,, 15th ,, ,, 21st	9	9
,, ,, 22nd ,, ,, 28th	25	18
,, ,, 29th ,, May 15th	21	18

Apparently the outbreak in Yanbo died out at the end of May; the total number of cases registered there since the beginning of the epidemic on Feb. 13th was 137 and that of deaths 126.

A few sporadic cases of plague have recently occurred again in Adalia on the south coast of Asia Minor. It will be recalled that in the summer of 1905, and again in August, 1906, a few isolated cases of the disease were observed here. There were none in 1907. In the present instance two cases occurred on July 26th; both the patients were employed in a flour mill and it was stated that an unusual mortality among rats had been observed in the mill and also in other quarters of the town. A third case was seen on August 22nd; the patient was also employed in a mill but in one situated near the port and far removed from the other mill. Finally, a fourth case was reported on Sept. 5th. As in the former outbreaks the exact source of the infection in these cases was unknown.

Plague has recently been prevalent in the Kirghiz Steppes of the Astrakhan government in south-eastern Russia. The returns have been very incomplete, but it is known that early in August nine cases of the disease with four deaths occurred among the Kirghiz in this region. A case of plague also occurred in Odessa early in August but the details have not been published.

Constantinople, Sept. 17th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Poor-law Provision and Consumption.

A PAPER was read at the thirty-fourth annual meeting of the North-Western Poor-law Conference held recently at Ulverston by Mr. Macfarlane, chairman of the Chorlton union, on the question of providing, in connexion with the Poor-law, sanatoriums for tuberculous patients. He quoted with approval a statement by Dr. Nathan Raw, that "adequate provision is made by the health authorities for every disease excepting the one that kills most people and which, if taken in time, is more easily cured than most other diseases." An inquiry made the other week at the Chorlton Union Hospital showed the close connexion between pulmonary tuberculosis and poverty, and "proved" also that in the majority of cases poverty, "if not the dominant, was a strong contributory cause of the disease." 30 men out of 100 in the phthisis wards were asked as to their former occupations and the probable cause of their sickness. Eight only had been engaged in the "dusty" or "dangerous" trades regarded as predisposing the workers to pulmonary tuberculosis—viz., one baker, one collier, one iron-grinder, one cabinet-maker, two French polishers, one grey-cloth warehouseman, and one shoe-maker. Of the remaining 22, 18 had been general labourers, who had contracted cold after cold and developed pulmonary tuberculosis. Poverty had compelled them to continue to work in inclement weather, or to forfeit part of the wage which as it was would barely support the wife and children. Mr. Macfarlane thought that there should be combined action between health

authorities and guardians to consider the best method of dealing with a disease acknowledged to be preventable and in a great measure curable. Boards of guardians, singly or in combination, could erect suitable sanatoriums, and he thought that the system of open-air treatment "had now passed the experimental stage." Workhouse hospitals had failed, the reason being that most cases came when too far advanced, but they were useful for the segregation of cases "in the last or acute stage." Dr. Garrett and Dr. Rhodes supported Mr. Macfarlane's views, and Dr. Rhodes proposed the following motion:—

That, in the opinion of this conference, it is desirable that sanatorial accommodation for the special treatment of phthisical cases be provided by the Poor-law unions within this conference area.

He proposed another motion, also carried, for forming a subcommittee to inquire into, and to report on, the best means of providing such accommodation. Very few will consider that the various efforts made to combat pulmonary tuberculosis are unnecessary and uncalled for, but it is satisfactory to know that already the death-rate from pulmonary tuberculosis is, no doubt in consequence of better hygienic conditions, though these are still bad enough in poor districts, steadily decreasing. Dr. Rhodes stated that in Lancashire in 1835, with a population of 1,500,000, the deaths from pulmonary tuberculosis were 8124. In 1907, with a population of 5,000,000, the deaths were 6238. It was agreed generally that this movement would have to be conducted economically and that "extravagance must be sternly repressed," and it was stated that the Durham Sanatorium "cost only £86 a bed." It appears as if the country were gradually becoming alive to this question of dealing with pulmonary tuberculosis, and it is a national not a local question.

Suicide and Suggestion.

A verdict of suicide during insanity was returned yesterday, in the case of a clerk who had lost his situation through drink and poisoned himself with gas. The city coroner pointed out that suicides by gas poisoning were on the increase. Three had occurred within a week and "he could not help thinking that some sort of suggestion was going on." Whether due to harmful literature, describing how it could be accomplished by gas, or whether it was through details being given in the daily press he did not know; but "he thought he was justified in asking the press on this occasion to keep out the details of the case." He thought if this were done the "epidemic" would probably cease. There is no question as to the wisdom of this suggestion and in this instance the local papers seem very properly to have acted up to it.

Death from Fear.

An inquest held on Sept. 24th at Morley on a man, aged 26 years, seems to show that death was due to fear rather than to anything else. Four teeth had been extracted by a dentist without "gas," as the patient was very nervous about taking it. An ordinary amount of bleeding took place but it set in later and the patient went to Dr. A. Firth who stopped it. It recurred, however, and Dr. Firth went to the man's home and stopped it again. The man was very nervous and fancied that he was going to bleed to death. He became delirious and died from exhaustion and heart failure. It was stated at the inquest that death was in no way due to the dental operation. The verdict was "Death through exhaustion from acute mania due to nervous fright." It is a question whether the education and bringing-up of these days may be to some extent accountable for the hypersensitiveness and want of "pluck" that are too common.

Medical Work in Schools.

At a meeting of the Manchester education committee held on Sept. 21st a scheme for the medical inspection of school children was adopted for submission to the city council and the Board of Education. Under this scheme Dr. A. Brown Ritchie will be the school medical officer for Manchester. There will be in addition three assistants to him at commencing salaries of £250 per annum, rising by four annual increments of £25 to £350 per annum, with £10 a year in each case for travelling expenses. The question of the appointment of medical women is to be postponed for the present. Dr. J. T. D'Ewart's services are to be retained on the present terms. The city is to be divided into three districts, each with an assistant medical officer. Five nurses are to be appointed and 12 weighing machines are to be bought for use in the schools. One of the lady members of the committee (Miss Burstall) was surprised that it was not proposed to appoint "at least one medical woman," and moved an amendment that of the three medical officers at least one should be a woman. This was seconded by a gentleman, not so much from sympathy with lady doctors as from sympathy with lady teachers and scholars. The chairman, Sir Thomas Shann, said that the matter had been fully discussed and that it would be very unwise at the present to act otherwise than in accordance with their recommendation. He said that next year the number of medical officers would have to be increased "and then would be the time to consider the appointment of a woman," thus displaying no great enthusiasm for the women doctors. Vice-Chancellor Hopkinson was in favour of so altering the wording of the scheme that it might be left to the discretion of the committee to appoint a lady doctor if it were felt desirable. Sir Thomas Shann replied, however, that the committee had decided, on very good grounds, to appoint medical men only at first. In the end Miss Burstall withdrew her amendment, having drawn attention to the matter. So the dispute, if it be one, will come up again.

Sept. 29th.

NEWCASTLE-UPON-TYNE.

(FROM OUR OWN CORRESPONDENT.)

The Need for Further Facilities for Post-Graduate Study.

Now that the vacation is over and the work of a new educational year is about to begin attention may well be called to the substance of an address given by Dr. A. E. Morison to the members of the North of England branch of the British Medical Association on the occasion of his assuming the office of president of the branch in June last. Dr. Morison recognises the great value of the work of the Association in organising the profession and urges that its energies should now be employed in another at least equally important direction—namely, the provision of facilities for post-graduate study. In Dr. Morison's opinion the local branch of the Association should be a centre of post-graduate education. He argues that learning is already highly specialised and is tending day by day to become even more so. This being so, it is impossible for one man to be at once "a skilled pathologist, physician, obstetrician, operating surgeon, and all-round specialist," but it is nevertheless a crying need that the practitioner engaged in the everyday practice of medicine should be provided with the opportunities necessary for informing himself of the advances made in the various branches of his art and science. The general practitioner does not ask to be provided with the facilities for becoming an all-round specialist but merely to be taught when the specialist can help him and what he can do for him. In Dr. Morison's words, "It is essential to the maintenance of our position for us to know when blood examinations, bacteriological investigations, Roentgen ray pictures, and examination with all the special instruments are necessary and advisable and when surgical operations are required." He continues, "In Newcastle there is, if properly organised, a collection of cases and material which ought to attract not only practitioners from our own area but from all parts of England. It only requires that the matter be fairly taken up by this branch to insure its success." No one will deny the truth of these contentions. Of the desirability of post-graduate study there can, of course, be no question; it is practically a necessity. The material is to be found in abundance in this city and the opportunities are present if they were utilised. Dr. Morison states that if the matter were fairly taken up its success would be insured. As regards this point I may say that the excellent attendances on such occasions as the all-day scientific meetings and at the classes which are at present held are sufficient evidence that Dr. Morison's contention is justifiable. The suggestion put forward in this address on behalf of the great body of general practitioners by their present representative should, and indeed must, receive most careful attention. The importance of the matter and the fact that the address was given during holiday times constitute the reason for referring to the subject on the present occasion.

College of Medicine.

The winter session begins on Oct. 1st. The College calendar for the ensuing year has just been issued. As

regards the teaching staff, no further changes are to be found beyond those already recorded in these columns. On the executive side an important change has taken place which will be to the utmost advantage of the College from the public point of view. The treasurership is now held by Mr. Cecil A. Cochrane, M.A. Oxon., a well-known and highly respected business man in the North of England. This is a most important step and one which it is difficult to overestimate. It is to be hoped that this principle of the introduction of public men into the affairs of the College will be more widely applied and that this forward move on the part of the "members" will very soon be followed by other equally necessary and vital changes. Mr. Cochrane will be sincerely thanked by all who have been watching the interests of the College for undertaking to find time to perform this public service. Another very gratifying fact is the addition of the name of Mr. Clement Stephenson, D.Sc., to the council. Mr. Stephenson has been, in the very highest sense, a lifelong friend of the College, and few unfamiliar with the inner workings of the College are aware of the enormous amount of unobtrusive work done in its interests in the past by him. It is only to be regretted that this slight recognition of his efforts to further the interests of the College has been so long delayed.

Assistant School Medical Officer for Newcastle.

A few weeks ago the corporation of Newcastle advertised for an assistant school medical officer at a salary of £200 per annum. A few applications were received and two candidates were selected to appear before a subcommittee of the education committee. One of these wrote regretting his inability to attend; the other was interviewed by the subcommittee but did not obtain the position. The committee has now decided to advertise again, offering a salary of £250 per annum. The original proposal to offer a salary of only £200 per annum was rather sharply criticised at the time when it was made, and it is somewhat surprising that the proposal should have been carried, seeing the demand that there is at the moment for school medical officers and knowing the reputation enjoyed by the corporation for employing highly qualified officers. Considerable satisfaction is felt locally that the committee has reviewed its decision and now offers a resonable remuneration for work that will be in the highest degree important and responsible.

Sept. 29th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Cardiff Water-supply.

THE water-supply of the city of Cardiff is obtained from the Brecknockshire Beacons, moorland situated some 30 miles distant where there are two impounding reservoirs. The consumption equals about 28 gallons per head of the population daily. Water carriage is universally adopted in the town, though there are still a fair proportion of hand-flushed water-closets. When the Brecknockshire supply was first decided upon it was fully anticipated that in the event of the population increasing in the future as it had in the past a third reservoir would be required, and such was indeed included in the original scheme. During the past few years the necessity for proceeding with the construction of this reservoir has been frequently discussed and the expenditure of large sums of money in other directions has probably been the principal cause of the delay in the realisation of the project. The waterworks engineer of the corporation has recently reported that the proposed works are of such magnitude that six or seven years must elapse before their completion and that by the end of that period the existing supply would be inadequate for the needs of the inhabitants if their numbers increased at the rate anticipated. In order to postpone, if only for a few years, such a serious outlay as that involved in the undertaking, it was suggested by some members of the corporation that some use might be made of the spring water which is constantly being pumped out of the Severn Tunnel by the Great Western Railway Company. This amounts to some 10,000,000 or 12,000,000 gallons daily and occasionally nearly 20,000,000 gallons. A few villages are supplied with about 25,000,000 gallons annually, the railway company use about 160,000,000 gallons for locomotive and other purposes, and the remainder is sent into the river Severn. The water is unfortunately extremely hard, its total hardness being 38 degrees and permanent 14, though by suitable softening processes a considerable reduction is possible. The proposal to use this water, so much of which was running to waste, seemed at one time to contain the solution of a difficult problem, but after investigating the matter very closely and after receiving a report from the medical officer of health (Dr. E. Walford) to the effect that owing to the high degree of permanent hardness the supply would be unsuitable for either domestic or manufacturing purposes, the waterworks committee has unanimously decided that the scheme is wholly impracticable.

County Medical Officer of Health for Devon.

Considerable interest has been taken in the appointment of a county medical officer of health for Devon. Three selected candidates appeared before the Devon county council on Sept. 24th and finally Mr. G. Adkins was elected by a large majority of votes. Mr. Adkins comes of an old Devonshire family, his father being in practice in Yealmpton, near Plymouth, for many years. Mr. Adkins was formerly medical officer of health of Plympton rural district and was deputy medical officer of health of Plymouth.

The Difficulties of Medical Officers of Health.

At the last meeting of the St. Just (Cornwall) urban district council a letter was read from the Local Government Board relating to the report of the medical officer (Mr. R. G. Nesbitt) on the recent outbreak of enteric fever at St. Just and Boscaswell. The Local Government Board stated that it regarded with great dissatisfaction the continued inaction of the council, which by its prolonged delay in providing a wholesome water-supply for the district and neglect in other matters of sanitation, was incurring grave responsibility. The Board urged the council to take into earnest consideration the medical officer of health's recommendations in regard to the water-supply and other sanitary matters. One of the members accused Mr. Nesbitt of "raising a hornets' nest about their ears," and moved a proposition, which was carried, that the Local Government Board should be informed that the council is endeavouring to obtain a supply of water for St. Just and the district.

The Tiverton (Devon) Rural District Council and the Local Government Board.

At a meeting of the Tiverton rural district council, held on Sept. 22nd, a letter was read from the Local Government Board stating that it could not sanction the council's scheme for the sewerage of Bradninch. The Board had previously advised the council that a qualified engineer of practical experience should be called in, but the council had neglected this advice and its sanitary inspector had prepared a scheme.

Insurance against Tuberculosis in Cattle.

The attempt of the National Meat Traders' Association to throw upon the farmers the whole pecuniary responsibility attaching to the inadvertent possession of tuberculous cattle is being viewed with alarm by agriculturists in the West of England. At a meeting recently held at Bristol and presided over by Lord Winterstoke it was unanimously resolved that the proposal of the Meat Traders' Association to throw the whole responsibility upon the farmer was unfair and that farmers, butchers, and auctioneers should combine and make such arrangements by insurance as would protect both the butcher and the grazier. In view, however, of promised legislation it was decided to postpone taking active steps in the matter. For five or six years past the question has been dealt with in a very satisfactory manner by the butchers and farmers in Monmouthshire and to a certain extent by some of those in Glamorganshire. The scheme adopted in these districts is rendered possible owing to the purchases of cattle being made by means of auction sales. The auctioneer deducts from the sums which he hands over to the farmer 1*s.* for each head of cattle sold and he undertakes to indemnify the butcher to the extent of one half the value of the animal in the event of its being condemned as tuberculous by a sanitary authority within 14 days of the purchase.

Medical Treatment of Cardiff School Children.

In his quarterly report to the Cardiff education authority the medical officer of health (Dr. E. Walford) makes some suggestive remarks in connexion with the amelioration of the

conditions revealed by medical inspection of the school children of the town. Much, he says, may be done without any specific medical treatment. For example, a certain proportion of the eye defects are due to defective lighting of class-rooms, to badly constructed desks, or to improper and constrained positions in writing and reading, while many of the disorders of the throat and nose can be remedied by improved conditions of heating and ventilation in the rooms. In the event of the education authority formulating any scheme for the medical treatment of the children attending the elementary schools Dr. Walford considers that it should be made to apply to that class of children whose parents are too poor to pay for medical attendance and are yet not eligible for the Poor-law relief.

Sept. 29th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Final Examination at the University of Glasgow.

OWING to the recent changes that have been made in the medical examinations at the University of Glasgow there will be the unprecedented number of three finals in 12 months—namely, in December, 1908, and in April and October, 1909. When it was first arranged to have two finals in the year the dates fixed were December and June, but this has now been altered to April and October. This latter change will benefit graduates in a way that is not at first apparent. Formerly when the final was held in June the graduation did not take place till the middle of July, whereas in other Universities, Edinburgh for instance, the final examinations were over about three weeks earlier, the result being that all the best posts in the country at the time were taken up before the Glasgow students were qualified to apply.

The Crichton Asylum, Dumfries.

In a recent article in the *Glasgow Herald* attention was drawn to the circumstances which led to the establishment of the Crichton Asylum. In 1823 there died at Friars' Carse, near Dumfries, Dr. James Crichton. He was a native of Sanquhar, studied medicine, became physician to the Governor-General of India, and amassed a large fortune by commercial enterprise and medical practice. On his death he left the sum of £100,000 to his widow, Elizabeth Grierson, the great-grand-daughter of Sir Robert Grierson of Lag, to be used for such purposes as she and trustees might direct. They were inclined to the establishment of a University at Dumfries, but a series of difficulties arose. Lord Brougham was Lord Chancellor at that time and he intimated that a scheme for the establishment of a fifth University in Scotland would meet with his opposition. The scheme was thereupon abandoned, and after consideration Mrs. Crichton decided to apply her husband's fortune to the erection and endowment of an institution for the treatment of the mentally afflicted. At that time in Dumfries the provision for persons mentally weak was notoriously inadequate and unsatisfactory. 12 apartments in the Dumfries Infirmary were kept for the detention of such patients, and this accommodation proving insufficient it was supplemented by the use of prison cells. In 1835 the foundation-stone of the Crichton Royal Institution was laid and a building was erected at a cost of £50,000 with accommodation for 120 patients.

"Home for Incurables" for Elgin.

Under the will of the late Mr. John Munro, merchant, the town of Elgin has benefited considerably. Amongst other legacies the sum of £6000 is left to the provost, magistrates, and town councillors of Elgin for the erection, equipment, and carrying on of public baths and a similar sum for a like purpose to the town of Forres. On the death of his sister his trustees are directed to convert his dwelling house, with garden and offices, into a home for persons, drawn from the county of Elgin and its burghs, suffering from diseases usually reckoned to be of an incurable nature. It is also directed that the whole residue of the estate shall be held as an endowment for the home.

Aberdeen City Hospital: Proposed Additions.

Extensive additions to the Aberdeen City Hospital are contemplated by the public health committee of the Aberdeen town council. The additions consist of (1) the enlargement of the two outside pavilions, Nos. 1 and 4, towards Urquhart-road, by 17 beds each and rearranging the two old wards to suit the new pavilions; (2) erecting an additional pavilion to contain 16 beds, at the south side of the offices; (3) erecting a skin disease pavilion, to contain 12 beds; (4) providing additional nurses' accommodation in the administration block by heightening the original front block to the south and making it three floors high, which would provide ten single bedrooms and two double bedrooms for nurses in addition to the present accommodation, and also provide a nurses' recreation room over the kitchen wing on the same floor; and (5) enlarging the reception block by additional wings to the south and north ends of the same, and rearranging the present internal wards to suit the new additions, giving accommodation for 12 beds extra. Pavilion No. 4 would be specially constructed for cases of pulmonary tuberculosis. At the present time there is accommodation in the hospital for 127 patients, and if the whole of the proposed additions were carried out it would be increased by 74 beds, making in all room for 201 patients. The estimated cost of the additions is £12,500, and if the scheme is approved the work will be commenced at once in order to give work to the unemployed.

Sept. 29th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Death of Sir Arthur Vernon Macan.

THE death of Sir Arthur Vernon Macan, professor of obstetrics in Trinity College, Dublin, took place on Saturday last, Sept. 26th, at his residence, 53, Merrion-square, thus depriving Dublin of one of its most prominent practitioners.

Richmond Hospital and Pauper Lunatics.

The question of pauper lunatics was before the meeting of the guardians in the North Dublin union workhouse on Sept. 23rd, to which reference was made in THE LANCET last week. A letter was read from Mr. J. O'Conor Donelan, medical superintendent of the Richmond and Portrane lunatic asylums, calling attention to the crowded condition of those institutions and stating that he had been directed by the joint committee to request that the milder or purely senile cases should be retained in the workhouse until such time as adequate provision should be made for the feeble-minded, as distinguished from the strictly insane. Early legislation on the matter has been promised, but meanwhile the joint committee finds that all the available accommodation in its two institutions has been practically absorbed. A scheme of further extensions is at present being developed, but no additional relief can be hoped for within the next 12 months. The chairman observed that no more could be done than there had been in the circumstances. They were pressed on the one hand by the joint committee not to send these people to its institutions, while, on the other hand, the Local Government Board was pressing to have them sent out of the workhouse. One member pointed out that they could not be left to die in the streets, and another having suggested that it was a matter that might be referred to the committee which was at present dealing with the general management of the house, an order was made to that effect. On the same date a corresponding discussion was carried out at a meeting of the guardians of the South Dublin union, at which it was decided that the guardians would not recede from their right to send insane paupers to the asylum.

Coombe Hospital, Dublin, and the Boarding-out of Infants.

At a meeting of the Rathdown board of guardians on Sept. 23rd some of the items of recent practice of the Coombe Hospital received a share of censorious criticism. Miss Griffin, inspector under the Infant Life Protection Act, reported the death of an infant named Alice Clarke, at the age of three weeks. She had been taken out to nurse by a Mrs. Mahon of Dundrum on August 31st. The nurse stated that she had received no certificate of health respecting this child nor any instructions or advice from the hospital authorities as to care or diet. After death there was a post-mortem examination and an inquest and the jury found that

the child had died from inanition from insufficient and improper food. At the inquest evidence was given in favour of the authorities of the charitable institution which was responsible for the boarding-out of the child to the effect that "infants are taken from their mothers at the Coombe Hospital and boarded out at about a fortnight old without any medical authority or certificate as to their condition, the mothers being then received into the institution at 8, Lower Leeson-street." The lady inspector added: "My experience is that a large proportion of the infants boarded out in this way die within the first year." And to the foregoing report she subjoined the verdict of the coroner's jury, which contained the following rider: "We do not attach any blame to the nurse. We condemn the practice of the Coombe Hospital in sending out to nurse children at an early stage of life, as we consider they should remain longer in charge of their mothers." Some members having defended and some others having attacked the Coombe Hospital practice in this respect, and contradictory views having been expressed regarding the judgment and the jurisdiction of coroners' juries in general, it was decided to furnish the authorities of the Coombe Hospital with a copy of the verdict of the jury.

Lay Views on Tuberculosis.

A letter recently appeared in a leading newspaper from the pen of a master of a workhouse which is sure to have its full share of attention from the average members of the rural population of our more remote districts at least. It announces "a most remarkable cure of an advanced case of consumption of a lady in Youghal." The patient had (May 13th last) been confined to bed for 11 or 12 weeks; weight had fallen from 8 stones 2 pounds to 6 stones 7 pounds; sputum had been sent to a Dublin bacteriologist for analysis, and consumption bacilli had been found; while the regulation "night-sweats, intermittent high temperature, racking cough, and profuse expectoration all pointed to the dread disease," and were well in evidence. Fortunately, however, the microbes had fallen upon thorny ground, for, as we are informed, "When the patient learned this, being herself a trained nurse and a person of strong mind, she said she would fight the bacilli, and thereupon got out of bed and commenced the Nordrach home treatment of consumption. Her husband procured a plan of the American home sanatorium or 'shack,' and forthwith erected one on the boundary wall of his little garden. ..... Here the patient sleeps with air as pure as if the bed was under the canopy of heaven. ..... Then she took the nourishing food—took it, so to say, artificially, without having any inclination to eat. ..... She now weighs 8 stones 1 pound. ..... Night-sweats and temperature have disappeared, Nature seems to resume her proper functions—all except the appetite for food; but this, according to Nordrach theory, will come in a year or two when the bacilli are completely routed, and not till then will recovery be complete." Wisely has the prophet spoken, as all readers must admit! And the correspondent goes on to say, in concluding: "I am not a doctor, but during my time as master of the Youghal Workhouse I saw a great many cases of consumption, and I have not the slightest doubt in my mind that were it not for commencing the Nordrach treatment the patient referred to would be in her grave to-day." In a country like Ireland this class of document will weigh more with country folk than 50 scientific lectures from anti-tuberculosis crusaders, so that the workhouse master has taken upon himself a heavy responsibility.

Double Tenancies in Belfast.

The Public Health Committee passed the following resolution on Sept. 24th:—

> That where two or more families reside in a house in which sanitary accommodation is only provided for a single family the executive sanitary officer be instructed to prosecute in order to put a stop to what the Revising Barrister described as "disgraceful" and "contrary to morality and decency."

With reference to the evils that arise from double tenancies the Belfast Health Commission reported as follows:—

> On the ground that the upper tenancies have in effect no sanitary accommodation, those double tenancies should be sternly abolished, or the provision of an external stairway from the upper rooms to the yard should be insisted upon. This double tenancy was not alleged to be necessary even on the ground of poverty of the tenants, yet it has been tolerated for years, although the practice is well known both to the Corporation and to the Public Health Department.

Sept. 29th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The French Vital Statistics for 1907.

THE vital statistics for 1907 have just been published. The deaths exceeded the births by 19,920, an excess due both to a fresh decline in the number of births, which was 32,878 less than in 1906, and to the increase in the number of deaths, which exceeded those of 1906 by 13,693; these exceeded the deaths of 1905 by 10,025, which in turn were 8968 above those of 1904. In comparison with 1906 the number of live births has diminished in 52 departments and has only increased in five. The departments in which the excess of deaths over births is especially apparent are those which comprise the richest country. The relative increase of the population per 10,000 rose to an average of 18 from 1901 to 1905; it fell to 7 in 1906 and in 1907 was replaced by a decrease of 5 per 10,000. There has been a great increase in the number of departments in which the deaths exceed the births.

The Treatment of Sleeping Sickness.

Professor Laveran of the Pasteur Institute, who has been wholly occupied for several years in investigating sleeping sickness, has communicated recently to the Academy of Sciences in the names of himself and his fellow worker, Dr. Thiroux, a note on the treatment of the disease based on a research upon guinea-pigs that had been injected with trypanosomes. He first used tartar emetic, following Plimmer and Thomson, and found that this drug was rapidly effective in causing the trypanosomes to disappear from the blood-stream. In this manner he was able to cure three out of 13 guinea-pigs which he treated. He then tried giving this drug in combination with atoxyl by hypodermic injection, with even better results, six out of the 13 animals being cured. Professor Laveran and Dr. Thiroux are at present trying the alternate administration of atoxyl and orpiment (sulphide of arsenic) which seems to promise the best results.

Tobacco Poisoning and Pregnancy.

M. Dastre communicated to the Academy of Sciences on Sept. 21st a note by M. Robinson concerning the effect of tobacco poisoning upon pregnancy. It has no effect upon this process in bitches, cats, and mares, but it has an effect upon rabbits and guinea-pigs. It is well known that women employed in tobacco factories run the risk of sustaining certain ill-effects from tobacco poisoning. M. Robinson has instituted an inquiry amongst Eastern women who use tobacco with negative results. Of those who smoke the *narghile* or large quantities of cigarettes—30 or 40 a day—M. Robinson has not found a single case of abortion which could be put down to the tobacco.

The Nursing School of the Assistance Publique.

On Oct. 1st an examination for pupils desirous of entering the nursing school of the Assistance Publique will take place. The candidates will have to undergo a medical examination and will in addition have to pass in dictation, to write a simple essay, and to pass a written examination in simple arithmetic. They will also be examined in sewing. The examination is open to female nurses and to servant girls already in the service of the Assistance, as well as to outside candidates. The school is for resident pupils who are girls of from 18 to 25 years of age and unmarried. Candidates already in the service of the Assistance may be as old as 30 years. Candidates if successful must undertake to serve the Assistance for a term of three years or in default must return the expenses of their keep. During their stay at the school the pupils receive board, lodging, light, firing, and laundry. In the first year they are paid 10 francs per month and in the second year 20. If their conduct in the school is satisfactory they are passed out with a certificate of a nurse of the second class.

Sept. 29th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Pestis Bubonica at Trieste.

THE cholera shadows hovering ominously on the horizon are stirring the Board of Hygiene to exceptional vigilance.

and now another unwelcome visitor of Asiatic origin has come to accelerate its "measures of precaution." On the morning of Sept. 18th in the offing of Trieste the pilot of the steamship *Francesco Ferdinando* fell ill with symptoms believed to be those of plague and died. Another of the *personnel* of the same vessel, seized with precisely the same symptoms, was conveyed to the hospital. In the two cases clinical investigation left no doubt that the cause of illness and (in the former) of death was pestis bubonica due to the presence of rats in the ship, several of these rodents having been found dead on board. The steamer had arrived from Bombay on August 21st, putting in at Fiume on Sept. 12th and thereafter re-entering the offing of Trieste on the 17th. As soon as the official examination had certified the nature of the disease the local authority took the required steps towards limiting its spread. So much for the plague. As to cholera, the Riviera Ponente and the Riviera Levante of the Mediterranean littoral, frequented as both are by Russians, are now, by the combined action of the French and Italian Board of Hygiene, subjected to the most stringent precautionary measures. On Sept. 21st the Prefect of Nice, accompanied by Dr. Castelli, director of the "Sanità Pubblica," and Dr. Anger, inspector of the French custom house, proceeded to enforce those measures at the sanitary station established at Ventimiglia.

Wounds from Poisoned Arrows in the Benadir.

In the encounters with the natives in this the most recently acquired of Italy's African possessions, certain of the Ascars (coloured troops) were wounded by arrows, but—slight as the lesions were—they died in spite of surgical treatment as prompt as it was careful. The medical staff, suspecting that the non-response to measures usually effective in such cases was due to exceptional causes, has, with the consent and coöperation of General Di Giorgi, chief in command of the expeditionary force, sent to the military hospital on the Caelian Hill some specimens of the arrows used by the natives, together with the "materiale clinico" necessary for the purposes of investigation, chemical and bacteriological. The arrows were collected on the scene of the two encounters of July 11th and 12th last in the Mellet woodland where Lieutenant Lombardi and certain of the coloured troops met their death. Pending the conclusions of the Roman commission to be issued in a special report, it is believed that the suspected poison is either curare or "ubaina" (glucoside of a plant common in the wooded country of the Benadir—the so-called "ubai"—two milligrammes of which suffice to *fulminare* (kill outright) a dog). When issued, the report of the commission will be distributed among the medical *personnel*, combatant and lay, of the Benadir Colony, who, in the meantime, seem to have convinced themselves that in wounds inflicted by the arrows in question the hypodermic injection of strychnine is not without real benefit.

More "Monstra Natantia" in the Mediterranean.

The shark on the prowl has long been a recognised danger in the Adriatic, particularly at the bathing establishments on its littoral, but now the Mediterranean itself is threatened with the same formidable aggressors. On Sept. 19th, off the Riviera Ponente, an enormous "pescicane" had been sighted in the near neighbourhood of more than one sea-bathing resort, deterring the more intrepid swimmers from venturing far out from shore and, indeed, spreading something like a scare among all and sundry. The owners of a fishing smack employed in netting tunny, having found some difficulty in landing their "take," at length ascertained that they had captured more than they bargained for—a shark of colossal proportions. They succeeded in noosing it and taking it in tow by means of a strong cable, and in spite of its furious efforts to escape at length landed it not far from Niellon, where, with knife and bayonet supplied from the fort, they gave it the *coup de grâce*. It proved in point of size worthy of a place in the museum, being not less than eight metres in length and 1500 kilogrammes in weight. The head was one metre long, while its teeth, triangular in shape, resembled those of a powerful saw, and were from eight to ten centimetres in length. On being eviscerated it was found to have swallowed a tunny weighing 30 kilogrammes and a small shark weighing 25 kilogrammes. Fortunately no trace of a human victim was found in its capacious interior.

Sept. 27th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Experiments with Marmorek's Serum.

IN a paper communicated to the *Wiener Klinische Wochenschrift* Dr. Grüner has published the results of his clinical observations on the serum of Marmorek in a series of cases of tuberculous diseases of children. He used subcutaneous injections of the serum strictly in accordance with Dr. Marmorek's instructions, the only cases taken into consideration being cases of tuberculosis affecting the bones, the lungs, and the meninges. The series included 44 children, all of whom were observed clinically; 12 of them were suffering from tuberculous meningitis. The investigations were carried out at the special desire of Dr. Marmorek. The method employed was as follows. A lumbar puncture was made, from 10 to 20 cubic centimetres of cerebro-spinal fluid were removed, and the same quantity of the serum was injected immediately afterwards. The treatment was ineffective in averting the customary fatal course of the disease, the nature of which was confirmed in all of the cases of meningitis by the post-mortem examination. As regards the treatment of the other cases the serum was sometimes injected per rectum, but as a rule this method was not adopted. The quantities used were from two to five cubic centimetres given every third or fifth day; in the cases of meningitis the subdural injections were of 10 to 20 cubic centimetres, whilst at the same time 100 cubic centimetres were injected hypodermically. Of the whole series only one case was arrested (a case of infiltration of the left apex), five were improved, nine became worse during treatment, and the remainder remained unaffected in either direction. In order to test the efficacy of the serum old tuberculin was mixed with the 100,000-fold quantity of Marmorek's serum and with this mixture cutaneous vaccinations were made, whilst control vaccinations with tuberculin mixed with normal horse serum were also made. Both series of vaccinations proved that the admixture of Marmorek's serum with tuberculin made no difference to the cutaneous effect of that substance when it was injected. Dr. Grüner draws the following conclusions. Marmorek's serum has no trustworthy effect in surgical or internal tuberculosis. Even in long-continued use with large doses (in some cases up to 300 cubic centimetres were employed within six months) the serum cannot prevent the appearance of fresh foci or new forms of the disease. In some cases it decidedly accelerated the course of the disease. There is no principal difference as regards the action of the serum whether it be introduced per rectum or subcutaneously. Even in 100,000-fold quantity the serum does not lessen the cutaneous reaction to tuberculin. "Therefore Dr. Grüner concludes that Marmorek's serum cannot be regarded as possessing specific properties against tuberculous diseases. The favourable results reported from different sources must be carefully analysed before accepting them for general conclusions."

Instructions for Reducing Infant Mortality.

Following the lead of German physicians and acting on the same principles as prompted the distribution of leaflets for suppression of venereal disease,[1] the Gesellschaft der Aerzte has turned the attention of its committee for sanitary improvements to the necessity of instructing all classes of the population as to the best way of bringing up infants. Physicians, midwives, and all those coming in contact with young mothers, especially the teachers in the highest standards of the public schools, are asked to exert their influence to persuade the public that the most natural and therefore the best nourishment for babies is their mother's milk. A circulating leaflet has been prepared and will be distributed amongst the classes of the population concerned containing valuable instructions on this point. Only in cases where the mother is physically unable to nurse her child is the use of thoroughly clean milk advised. The advantage of "mixed nourishment" consisting of the mother's and of cow's milk over the latter alone is insisted upon. The results of the so-called "gouttes de lait" or Milchkassen, which provide either at a nominal cost or free of charge unobjectionable cow's milk for babies, are

[1] THE LANET, August 1st, p. 339.

also presented for consideration and the establishment of such institutions is earnestly encouraged. The leaflet is also sent to municipal officers, to proprietors of large works, and to many country physicians. The value of proper clothing, of abstaining from alcohol during lactation and gestation, and the necessity of weighing the baby regularly are also dwelt upon. Every help is promised by the committee to those who wish to establish the above-mentioned institutions. A few figures are appended showing the infant mortality in different districts, according to the method of feeding.

An Important Judgment.

In a suit brought by a medical man against the parents of a patient of full age for recovery of fees for treatment the Court of Justice took a remarkable view and the judgment is important for the profession in Austria. A man, aged 32 years, with a family of two children, fell ill, and during that time his means were so reduced that he could not pay his doctor's bill amounting to some £50. Thereupon the doctor asked payment from the parents, which was refused because the patient had his own home and the parents did not call the doctor to undertake the patient's treatment. The judge, however, decided that parents must not only take care for the children under full age but must also, if the child is of full age and cannot support himself, find the means for his upkeep. The recovery of health is essential for the child to regain his earning capacity, therefore the parents are bound to support him until he is able to earn his living. The age incident must be neglected in such circumstances. Judgment was given in favour of the medical man and the money was paid into the court.

Strike of the Students at the Veterinary College.

The students of the Veterinary College have decided to enter upon a general strike by refusing to attend any lectures and by abstaining from examinations until their grievances are removed. The school is under military supervision, which has no precedent in university administration. The management is therefore military, and as veterinary surgeons are not regarded as the social equals of other officers or of medical men their affairs are treated in a somewhat "off-hand" fashion. The financial aspect of the studies and the expenditure on the teaching staff are very unsatisfactory, the accommodation for dissecting and the clinical treatment of animals are very primitive, and the whole military system is very irksome to the students. Several attempts have been made in vain to bring this university college under the control of the Ministry of Education, when it would take equal rank with the other medical colleges. The conservatism of certain classes affords too powerful an obstacle for rational measures. The students have also tried in vain to obtain the title of "Veterinary Doctor." The military management of the college is said to be responsible for the unsatisfactory progress of scientific life in the veterinary school of Vienna, which 50 years ago was regarded as a model of its kind. Since that time all medical men of any standing have refused to have anything to do with the teaching at the college, and bacteriology as well as parasitology cannot be learned there. The students, in a memorandum presented to the Ministry of War and the Ministry of Education, have explained these facts and desire that the college shall be immediately handed over to the control of the University of Vienna, affording the only hope of a proper revival of veterinary study. Should their wishes be not complied with within a certain time they threaten to cease their studies altogether. This would be a very serious matter for the army, where the veterinary service is a branch of ever-growing importance.

Sept. 27th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Proportion of Fat in the Milk-Supply.

THE Food Standards Committee under the Pure Foods Act in Victoria fixed the requisite fatty solids for milk at 3·5 per cent. The Master Dairyman's Association has protested that this is excessive and has asked that it should be reduced to 3·3 from August 15th to April 15th in each year. It submits that during this period the amount of fat solids is much less than during the remainder of the year. The standard was fixed originally on the result of an average of 3·9 from 2000 samples taken throughout the State. The association contends that this is not a true foundation. It points out that in England the standard is 3 per cent. and the New Zealand producers are protesting that 3·25 is too high and suggest that 3 per cent. is a fair figure. Last year a deputation from the same body asked for a 3·3 standard all the year round. The Food Standards Committee has declined to lower the standard. The chairman, Dr. Norris, said: "Concerning the standard in England and most European countries whatever may be the pressure of circumstances which fixes it at its present ridiculously low rate the analyses of a leading dairy company in London show the following average composition for 200,000 samples: total solids, 12·9; fats, 3·9."

Private Hospitals.

In introducing a Bill to regulate private hospitals in New South Wales Dr. Mackellar said that there were 107 lying-in homes in Sydney and 334 in the whole State. Perhaps 10 per cent. of these were efficient. His Bill aimed at insuring absolute and not relative cleanliness in these institutions. Quite a number of these "homes" were under suspicion. A detective with 15 years' experience had sworn that he knew six men and 30 women in Sydney and the suburbs who were abortionists and the majority were connected with "lying-in homes." That, he thought, was a strong argument for State supervision.

The Victorian Sanatorium for Consumptives.

At the annual meeting of the friends and supporters of the Victorian Sanatorium for Consumptives the committee regretted that the public support which was required had not been forthcoming. The number of patients treated between July, 1905, and the present date was 544. The committee complained that during this period the institution had been subjected to persistent attacks by one section of the press which, though fully and convincingly disproved, had had a prejudicial effect on the public. The committee stated that the Premier had intimated that unless the recommendations of the inspector of charities, the main feature of which was the abolition of paying patients, were adopted the Government grant would be withheld. It had informed the Premier that it could not see its way to undertake such a responsibility unless under complete guarantee. It reluctantly advised that the institution should be closed. The institution, which comprised a winter home at Echuca and a summer residence at Mount Macedon, was formerly largely under the direction of one medical man. This gentleman subsequently severed his connexion with it and remained hostile to the new management. The main objections urged against the institution were that patients were subjected to varying conditions according as they were or were not able to pay for maintenance and that the practice of moving the establishment from one place to another was needlessly expensive. The Echuca quarters were unfavourably regarded by experts. The motion to close the establishment was carried but the Premier has since conferred with the late chairman of the sanatorium committee and it is probable that the Mount Macedon establishment will be reorganised and carried on with Government aid as a purely charitable institution.

A Dying Race.

According to the report of the Aborigines Protection Board for the year ending Oct. 31st, 1907, there were in New South Wales 2347 full-blood aboriginals. Of these 939 were males, 669 females, and 739 children. These with 4613 half-castes make up a total of 6960, as against 7072 the previous year, a decrease of 112. Among full-blood aboriginals the deaths exceeded the births by 60. One of the most important questions which the Board has to face is that of the large number of half-caste and other children (some almost white) at the various stations. Under present conditions, though much has been done for some of them as regards primary education, they are to a large extent growing up in idleness and under the influence of ill-regulated parents. The report says that, "an attempt will be made to solve what is undoubtedly a difficult problem."

Generous Victors in a Libel Action.

A somewhat unusual action for libel was heard recently at Daylesford (Victoria) before Judge Eagleson. Mrs. Mary Roberts had published a letter in a local paper making serious statements reflecting on the management of the Daylesford Hospital in matters of the food and accommodation supplied

to patients. The hospital committee entered an action for libel against Mrs. Roberts, and the case occupied several days in hearing. Judge Eagleson in summing up said that he did not believe a single word given in evidence by certain witnesses in support of the charges. He was satisfied that the defendant had no grounds for referring to the management as inhumane and that there was gross misrepresentation in calling certain rooms "cold, damp cells." There must be judgment for the plaintiffs with full damages claimed, but he thought that the defendant had made an honest mistake. The damages claimed were £49, but counsel intimated that upon Mrs. Roberts giving an expression of regret the plaintiffs would consent to a verdict for 1*s.* damages without costs. Judgment was entered accordingly.

The Melbourne Benevolent Asylum.

The fifty-eighth annual meeting of the friends and supporters of the Melbourne Benevolent Asylum was held under the presidency of the State Governor (Sir T. Gilson-Carmichael). On June 30th there were 650 inmates (404 males and 246 females). Altogether 1000 persons had been relieved during the year. The cost per head was 5*s.* 1½*d.* per week, covering medical attendance, nursing, drugs, clothing, food, fuel, light, administration, and burial expenses. The number of deaths was 179, including 58 old-age pensioners. Many were admitted in a moribund condition. There were 100 blind people amongst the inmates. The new asylum to be built at Cheltenham would cost £96,000 and the foundation stone would be laid next October.

The Contagious Diseases Act.

The Premier of New South Wales has introduced a Bill which contains a provision for detaining prisoners who may be found suffering from venereal diseases for purposes of treatment. An immediate agitation has been raised by a section of the public and the old cries of State recognition of vice and so on are being lustily proclaimed. It is improbable that the measure will be carried into effect.

Vital Statistics for Australia.

The Commonwealth statistician has published the first complete tabulation of a year's vital statistics for Australia. The figures cover the year 1907 and show that the total number of births in the Commonwealth was 110,347, which is the highest on record. The birth-rate has gradually increased since 1903 (the year of the great financial panic). In that year it was 25·23 per 1000 of the mean population and has risen to 26·55. 6075 mothers were under 21 years of age, the youngest being 14; while of mothers of illegitimates the youngest was 13. One mother in 106 gave birth to twins and 1 in 7872 to triplets. The illegitimate birth-rate was 6·15 per cent. of the total births, which is a slight decrease. 32,470 marriages were celebrated during 1907. In 12 instances both contracting parties had been through the divorce court. In one case the bridegroom was 83 years of age and the bride 79. The deaths numbered 45,305, equivalent to a rate of 10·9 per 1000 of the mean population. No fewer than one-fourth of these occurred in public institutions.

Hospital Collection.

The directors of the Royal Prince Alfred Hospital, Sydney, have adopted a somewhat novel mode of stimulating public interest in the needs of the institution. A bioscope entertainment was given in a suburban town-hall and views were shown which depicted a street accident to a blind man to whom first aid was rendered by the civil ambulance brigade which also conveyed him to the hospital. There he was shown undergoing treatment in the casualty department and afterwards as a patient in the wards, as a convalescent in the grounds, and finally as leaving the hospital cured.

Obituary.

Dr. J. R. McInerney, a well-known physician in Melbourne, died on July 24th from pneumonia after a short illness. The late Dr. McInerney was a native of Galway and after studying medicine and qualifying in Dublin eventually took the degree of M.D. Durh. He was for 25 years physician to the Melbourne Hospital but was defeated four years ago and was subsequently appointed indoor physician to the Prince Alfred Hospital.

Dangerous Prescriptions.

The Sydney city coroner recently held an inquest concerning the death of a woman who died from arsenic poisoning. The evidence showed that the deceased had suffered from rheumatism and had taken a medicine the prescription for which had been obtained by her husband from the chief mate of a steamer while on a voyage several years ago. The husband had the prescription dispensed by a Sydney druggist. After a few doses his wife became very ill and eventually died in the Prince Alfred Hospital. The Government medical officer, who made a post-mortem examination, said that in his opinion the doses of arsenic were excessive and that the prescription ought not to have been made up without the signature of a well-known medical man.

Deaths from Cocaine.

In the South Australian House of Assembly the Attorney-General, in reply to a question, said that he had been informed of two cases of death during the past few days consequent on the administration of cocaine during dental operations. The medical certificate in one case was "heart failure"; in the other "diabetes, poisoning from cocaine or eucaine, coma." The same dentist operated in both cases and he was a registered practitioner but had passed no examination in dentistry or anæsthetic administration in that State. The Attorney-General expressed surprise that the city coroner had considered no inquest necessary and he had asked his reasons for this opinion. If necessary further action was to be taken.

Sept. 3rd.

Obituary.

FREDERICK HENRY ALDERSON, M.D. ST. AND., M.R.C.S. ENG., L.M., L.S.A., J.P.

THE death occurred on Sept. 3rd of Dr. Frederick Henry Alderson at his residence, Aboukir House, Poole-road, Bournemouth. Dr. Alderson was born in 1839 and, following the footsteps of other members of his family, began the study of medicine in the then usual way, as a pupil of the late Dr. Ayling of Great Portland-street, W. Subsequently he entered the Middlesex Hospital and qualifying in 1863 M.R.C.S. Eng., L.S.A. Lond., L.M., in 1880 graduated M.D. of the University of St. Andrews. He was assistant house surgeon at the Poplar Hospital and house surgeon at the West London Hospital from 1863 to 1864. In the next year he commenced general practice in Hammersmith, where he remained until 1899, during which time he built up a large practice, holding at one time and another the appointments of Poor-law medical officer, public vaccinator, and surgeon to Oddfellows and other friendly societies. During the epidemic of cholera in 1866 he was appointed a special medical officer by the vestry, as also in two epidemics of small-pox.

Dr. Alderson took the liveliest interest in every matter that affected the medical profession; he was for over 30 years a member of the board of management of the West London Hospital and was an active supporter of that institution. He was one of the founders of the West London Medico-Chirurgical Society and was fifth president in 1886–87, reading for his presidential address an interesting and well considered paper on "The Wants of the General Practitioner of the Present Day"; he remained a vice-president of the society until his death. He was president of the Incorporated Medical Practitioners Association in 1893 and was one of the most active members of the profession in endeavouring to obtain increased Direct Representation on the General Medical Council. In 1891, in conjunction with Mr. George Brown, he sought election as a Direct Representative on the General Medical Council, polling 4816 votes, and although unsuccessful was again a candidate in 1896, standing as an "Independent" with non-success as an almost foregone conclusion. At this election the apathy of the profession in the matter of Direct Representation on the General Medical Council was remarkable, only 11,990 voting papers being returned, 22,577 having been issued. He assisted in the formation of the London and Counties Medical Protection Society and he was a member of its council and of the executive committee of the Royal British Nursing Association, the interests of which he worked hard to promote. He gave evidence before the committee of the House of Lords on "Hospitalism" in 1891. In 1899 Dr. Alderson retired from practice and went to live at Bournemouth. Here, while still retaining his great interest in things medical, he found time to take an active part in local affairs as a guardian

and more recently as a magistrate for the borough of Poole Dr. Alderson leaves a widow, two daughters, and three sons. Two of his sons are members of the medical profession.

The funeral took place on Sept. 8th at All Saints' Church, Branksome Park, Bournemouth. Many friends and representatives from the public bodies in Poole to which Dr. Alderson belonged were present, Dr. Alderson's youngest son taking a part in the service.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced: Dr. Alexander von Poehl, professor of pharmacology in the St. Petersburg Military Medical Academy, whose name is well known in connexion with the introduction of spermin and many other remedies prepared from various organs of animals.—Dr. Joseph Eichberg, professor of medicine in the Miami Medical College, Cincinnati.—Dr. Dubisson, physician to the St. Anne's Asylum, Paris.—Dr. J. Reboul, surgeon to the Nimes Hospitals.

Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* The title of Professor has been conferred on Staff-Surgeon Dr. Kimmle, the general secretary of the German Red Cross Societies; Senior Staff-Surgeon Dr. Steudel who has made important researches in the department of tropical medicine; Dr. Johannes Ruge who was for many years assistant to the late Professor Gerhardt and who since then has been bath physician at Kudowa; and on Dr. Carl Oppenheimer, assistant in the Physiological Institute of the Agricultural Department. Dr. Englemann, Director of the University Physiological Institute, proposes to retire at the conclusion of the current winter session.—*Bologna:* Dr. Filippo Lussana has been recognised as *privat-docent* of Experimental Physiology.—*Bordeaux:* Dr. Gentes, *agrégé*, has been appointed Professor of Anatomy.—*Chicago (College of Physicians and Surgeons):* Dr. Daniel N. Eisendrath, Assistant Professor, has been appointed to the chair of Surgery.—*Cracow:* Dr. Julien Talko Hryncewicz, has been appointed Extraordinary Professor of Anthropology.—*Kiel:* Dr. K. von Korff, *privat-docent* of Anatomy, has been granted the title of Professor.—*Naples:* Dr. Sergio Pansini, Extraordinary Professor of Medical Diagnostics, has been promoted to an Ordinary Professorship.—*Parma:* Dr. Emilio Santi of the Florence Medical School has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Pavia:* Dr. Giulio Ascoli of the Genoa Medical School has been recognised as *privat-docent* of Internal Pathology.—*Prague (German University):* Dr. Kleinhans has been appointed Ordinary Professor of Midwifery and Gynæcology in succession to Professor von Franqué who is going to Giessen.—*Rome:* Dr. Giuseppe Cirincione, Professor in the Palermo Medical School, has been appointed Professor of Ophthalmology.—*Sienna:* Dr. Eugenio Centanni, Extraordinary Professor of General Pathology, has been promoted to an Ordinary Professorship.—*Tomsk:* Dr. Alexandrovich Dochevski, *privat-docent*, has been promoted to be Extraordinary Professor of Special Pathology and Therapeutics.—*Toronto:* Dr. Robert D. Rudolf, Assistant Professor of Medicine, has been appointed to the Chair of Therapeutics.—*Turin:* Dr. Giuseppe Satta has been recognised as *privat-docent* of Pathological Chemistry.—*Utrecht:* Dr. J. E. Grevers of Amsterdam has been appointed Lecturer on Odontology.—*Vienna:* Dr. Rudolf Kraus, *privat-docent* of General and Experimental Pathology, has been promoted to an Extraordinary Professorship.

LITERARY INTELLIGENCE.—Messrs. P. S. King and Son have in the press, to be published early in October, a brochure on the Sweating of Women Workers. Besides general information on the subject it will contain a popular digest of the report of the Select Committee of the House of Commons, just published, and Mr. Henderson's Bill on Sweated Industries. The author of the treatise is Mr. James Samuelson of the Middle Temple.—Messrs. Baillière, Tindall, and Cox will have ready for publication next week a volume comprising a series of articles by British, American, and European experts treating on "Tuberculosis in Infancy and Childhood." The volume is edited by Dr. T. N. Kelynack. The same publishers will also issue the seventh edition of Rose and Carless's 'Manual of Surgery." This has been thoroughly revised, with the inclusion of many new and original illustrations.

THE ROYAL WATERLOO HOSPITAL.—H.S.H. Prince Alexander of Teck will occupy the chair at the next meeting of the special appeal committee of the Royal Waterloo Hospital on Thursday, Oct. 8th, at 11.30 A.M., at Belfast Chambers, Regent-street, W.

CHARING CROSS HOSPITAL MEDICAL SCHOOL.—The following entrance scholarships have been awarded: Epsom scholarship (60 guineas), Arthur M. Jones; Huxley scholarship (50 guineas), Evelyn A. Sutton. Entrance scholarships: Edward H. Morris (30 guineas), Charles E. Williams (dental) (30 guineas), Kenneth V. Smith (20 guineas), and a Universities scholarship of 50 guineas, Thomas Beaton.

THE LATE DR. H. MONTAGUE MURRAY.—On Sunday next, Oct. 4th, after the close of the morning service (about 12.20 P.M.) at the King's Weigh House Church, Duke-street, Grosvenor-square, W., there will be unveiled a mural brass to the memory of the late Dr. Montague Murray, senior physician to Charing Cross Hospital. The brass bears the following inscription:—

> To the Memory of HUBERT MONTAGUE MURRAY, M.D., F.R.C.P., Physician to Charing Cross Hospital, Treasurer of this Church,
> Who died November 25, 1907, aged 52 years.
>
> "How happy is he born or taught
> Who serveth not another's will;
> Whose armour is his honest thought
> And simple truth his highest skill."
> —*Wotton.*

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 6, Catherine-street, Strand, London, W.C., on Sept. 18th. There were present: Dr. F. de Havilland Hall, in the chair; Dr. M. G. Biggs, Dr. M. Greenwood, Mr. J. Brindley James, Dr. W. A. Dingle, Mr. F. S. Edwards, Dr. W. G. Dickinson, Dr. F. C. Martley (Dublin), Dr. W. Knowsley Sibley, Dr. H. A. Sansom, Dr. J. W. Hunt, Dr. St. Clair B. Shadwell, Dr. F. J. Allan, Dr. F. S. Palmer, Mr. Edward Bartlett, and Dr. J. B. Ball. The accounts produced show, as usual, a marked diminution in the amount of sickness compared with the experience of the spring of the year. The difference this year is greater than usual as the influenza epidemic added largely to the sickness disbursements in the first three months of the year. The number of new members is exceptionally large. Last year made a record in this respect, but there is every reason to hope that the new proposal list for 1908 will show a still larger total. Prospectuses and all other particulars may be obtained on application to Mr. F. Addiscott, Medical Sickness and Accident Society, 33, Chancery-lane, London, W.C.

LONDON COUNTY COUNCIL SCHOLARSHIPS FOR STUDENTS OF MIDWIFERY.—In January, 1909, the London County Council will proceed to award not more than six scholarships to students in midwifery. Candidates must furnish satisfactory evidence as to character, must be not less than 24 and less than 40 years of age on July 31st, 1909, and must be certified by the Council's medical officer as being in good health. They must be resident at the time of application and award within the area of the administrative County of London. They must also be prepared to satisfy the Council as to their need for pecuniary assistance for the purpose of training as midwives. They will be required to pass a qualifying examination in writing from dictation and elementary arithmetic. This will be held on Friday, Nov. 13th. The value of the scholarships will be £25, this sum being payable to the institution selected by the applicant in part discharge of the fee for board, lodging, and tuition. The course of training, including practical work at the institution, will extend over a period of six months. The scholarships must be held at the institutions recognised by the Central Midwives Board and approved by the Council. Forms of application and further information may be obtained on application from the

Executive Officer, Education Offices, Victoria Embankment, London, W.C. The forms of application must be returned to the same address not later than Saturday, Oct. 17th next.

UNIVERSITY COLLEGE HOSPITAL.—Mrs. Berkeley Hill has presented to University College Hospital, in memory of her late husband, a very interesting group of the portraits of his colleagues in the year 1891.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE, BLOOMSBURY, W.C.—The first lecture of the winter term will be given by Dr. James S. Collier on Tuesday, Oct. 6th, at 3.30 P.M., on Local Lesions of the Spinal Cord—Anatomy.

THE medical exhibition under the management and supervision of the *British and Colonial Druggist* will take place at the Royal Horticultural Hall, Vincent-square, London, S.W., on Monday next, Oct. 5th, and the four following days. The exhibition will certainly be of interest to members of the medical profession.

THE WINSLEY SANATORIUM FOR CONSUMPTIVE PATIENTS.—The quarterly meeting of the board of governors of the Winsley Sanatorium was held at Bristol on Sept. 16th under the presidency of Dr. R. Shingleton Smith. It was decided to admit patients from outside the counties of Gloucestershire, Wilts, and Somerset on payment of 2 guineas weekly, so long as beds were available without depriving patients within the three counties. The medical officer of the institution having resigned, it was decided to advertise the appointment, the salary to be £200 per annum, rising by £20 a year to £300. The financial position of the sanatorium was carefully considered and it was stated that an additional income of £600 a year was required.

KING'S COLLEGE (UNIVERSITY OF LONDON): PRELIMINARY AND INTERMEDIATE MEDICAL STUDIES.—During the long vacation extensive additions have been made to the anatomical department and the area of the dissecting room has been largely increased. Complete equipment is now provided for research work in anatomy and embryology. The College provides the fullest facilities for students in all subjects connected with preliminary and intermediate work, both for those wishing to pursue the whole course and for occasional and research students. A student desirous of obtaining a medical degree in London can begin his career by attending courses as a university student at King's College and after passing his intermediate examination can select any of the London Hospitals in which to complete his studies.

ROYAL SANITARY INSTITUTE.—A provincial sessional meeting of this institute will be held at the City Council Chambers, Guildhall, York, on Saturday, Oct. 17th, at 11 A.M., when a discussion will take place on "The Architecture and Sanitation of Elementary School Buildings." The discussion will be opened by Mr. J. Osborne Smith, F.R.I.B.A. It is hoped that the following will take part in the discussion: Dr. R. H. Crowley, medical superintendent, Bradford education authority; Dr. J. Mitchell Wilson, medical officer of health, East Riding of Yorkshire county council; and Mr. H. R. Morrell, head master, Scarcroft School, York. A general discussion is invited. The chair will be taken at 11 A.M. by Mr. H. D. Searles-Wood, F.R.I.B.A., chairman of the council of the institute.

DONATIONS AND BEQUESTS.—Miss C. F. Foster of Norwich has among other bequests left the following: £200 each to the Deaf and Dumb Asylum, Old Kent-road, London, the Eastern Counties Asylum for Idiots, Colchester, the Hospital and School for Indigent Blind, Norwich, and the Norfolk and Norwich Eye Infirmary, £500 to the Jenny Lind Infirmary for Sick Children, and £1000 to the Norfolk and Norwich Hospital.—The late Colonel James Reid of Greenock has bequeathed £1000 to the Greenock Infirmary and £500 each to the Eye Infirmary and the Greenock Medical Aid and Sick Nursing Society.—Under the will of Mr. Thomas Beeley of Manchester the testator bequeathed £500 to the Ashton-under-Lyne Infirmary for its Endowment Fund.—The late Mr. Francis Verrall of Lewes and Crowborough has bequeathed £500 to the Lewes Dispensary and Infirmary and Victoria Hospital, Lewes.—Miss M. B. Johnston of Widcombe, Somerset, has bequeathed £1000 each to the Cancer Hospital, London, and the Royal Free Hospital, London.

THE DEVON COUNTY ASYLUM, EXMINSTER.—At a meeting of the Devon county council held on Sept. 24th it was decided to erect six additional cottages at Exminster Asylum at an estimated cost of £1500; and it was determined to vote £1200 towards the cost of the new sewage disposal works at Exminster, subject to the approval of the Local Government Board.

LONDON HOSPITAL MEDICAL COLLEGE.—The following entrance scholarships have been awarded for the session commencing Oct. 1st, 1908: Price scholarship in science, value £120, D. E. Morley. Science scholarships: value £60, J. R. K. Thomson; value £35, A. R. Elliott. Epsom scholarship: value £126, K. Biggs. "Price" scholarship in anatomy and physiology, open to students of Oxford and Cambridge Universities, value £60, H. Scott Wilson, B.A. (Queen's College, Oxford).

QUEEN VICTORIA JUBILEE CONVALESCENT HOME, DURDHAM DOWNS, BRISTOL.—A bronze tablet has recently been placed in the entrance lobby of this institution. It bears the following inscription:—

> In honour of Her Gracious Majesty Queen Victoria; in Memory of a Beloved Wife; and in sympathy with the suffering, this house was given by Sir E. P. Wills, for a Convalescent Home, on the occasion of the 60th Anniversary of Her Majesty's Accession, June 20th, 1897, and the home was opened by Her Majesty on November 15th, 1899. A.D. 1908.

This convalescent home is doing excellent work, and since its opening 12,400 patients have been admitted.

GUY'S HOSPITAL MEDICAL SCHOOL.—The following entrance scholarships and certificates have been awarded: Senior science scholarship for University students (£50), Nathan Mutch, B.A., Emmanuel College, Cambridge; certificate, H. W. Barber, B.A., Clare College, Cambridge. Junior science scholarships: £150, J. F. G. Richards, Preliminary Scientific (M.B.) Class, Guy's Hospital; £60, W. L. Webb, Preliminary Scientific (M.B.) Class, Guy's Hospital; certificate, G. S. Miller, Preliminary Scientific (M.B.) Class, Guy's Hospital. Entrance scholarships in arts: £100, A. J. E. Smith, Rugby School; £50, H. W. Evans, Modern School, Bedford.

NEW HOSPITAL FOR LYDNEY (GLOUCESTERSHIRE) AND DISTRICT.—On Sept. 24th Sir Charles Dilke, M.P., in the presence of a large gathering formally opened the new hospital for Lydney and district. The building comprises two wards of four beds each, operation theatre, dispensary, &c. The site was given by Mr. C. Bathurst and Mr. R. Thomas has defrayed the whole cost of building the hospital. Mr. Bathurst suggested as a means of providing an "endowment fund" that if the public would subscribe £800 for this purpose by the time the hospital was completed he would make the sum up to £1000. The public has responded to the appeal and there is no doubt that the required amount will be raised.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

ADKINS, GEORGE, L.R.C.P. Lond., M.R.C.S., L.S.A., D.P.H. Camb., has been appointed Medical Officer of Health for the County of Devon.

BRICE, ERNEST, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed a Medical Inspector of Schools for Swansea.

COOPER, J. BURDON, M.D., B.S. Durh., F.R.C.S. Edin., has been appointed Honorary Ophthalmic Surgeon to the Bath Eye Infirmary.

DAVIES, JOHN LEWIS, M.B., Ch.M. Edin., has been appointed a Medical Inspector of Schools for Swansea.

DOBIE, E. C., M.B., M.S. Edin., has been appointed Senior Honorary Surgeon to the Chester Infirmary.

EDWARDS, DAVID RICHARD, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed a Medical Inspector of Schools for Swansea.

EVANS, JOHN, L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed a Medical Inspector of Schools for Swansea.

FROST, JOHN KINGDOM, M.D. Durh., M.R.C.S., L.S.A., D.P.H. Camb., has been appointed District Medical Officer and Medical Officer to the Workhouse by the Dorchester Board of Guardians.

GLENNY, ELLIOTT THORNTON, M.B., B.S. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer to the Ashley Down (Müller's) Orphanage Home, Bristol.

HANSON, ALFRED, M.R.C.S., L.R.C.P. Edin., has been appointed a Medical Inspector of Schools for Swansea.

HULBERT, H. L. P., M.B., B.S., D.P.H. Camb., has been appointed School Medical Officer to the Manchester Education Committee.

HUNTER, CLEMENT HARRIS, M.R.C.S., L.R.C.P. Lond., has been appointed a Medical Inspector of Schools for Swansea.

KEMP, CHARLES, M.B., C.M. Aberd., has been appointed a Medical Inspector of Schools for Swansea.

KING, C. A., M.B., B.S. Lond., has been appointed Assistant Female Medical Officer to the General Post Office.

KNIGHT, FREDERICK, M.D. Lond., M.R.C.S., L.S.A., has been appointed a Medical Inspector of Schools for Swansea.

LAVINGTON, CYRIL CLAUDE, M.B., B.S. Durh., has been appointed Medical Registrar at the Bristol Royal Infirmary.

MORGAN, EDWARD RICE, M.R.C.S., L.R.C.P. Lond., has been appointed a Medical Inspector of Schools for Swansea.

O'SULLIVAN, MICHAEL, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed a Medical Inspector of Schools for Swansea.

OWEN, ARTHUR DEAKER, M.R.C.S., L.R.C.P. Lond., has been appointed District Medical Officer and Public Vaccinator for the Hampton District of the Kingston Union.

POWELL, THOMAS MORGAN JONES, M.B. Lond., M.R.C.S., L.R.C.P., has been appointed a Medical Inspector of Schools for Swansea.

RAWLINGS, HORATIO EDWARD, L.R.C.P. Irel., M.R.C.S., has been appointed a Medical Inspector of Schools for Swansea.

REID, D. MACKINLAY, M.B., Ch.B. Glasg., has been appointed Second Assistant Medical Officer at the Govan District Asylum, Hawkhead, Paisley.

REID, EDGAR, M.R.C.S., L.R.C.P. Lond., has been appointed a Medical Inspector of Schools for Swansea.

RITCHIE, MARY ANN THOMPSON, M.B., Ch.B. Glasg., has been appointed a Medical Inspector of Schools for Swansea.

ROBERTSON, A. H. MACCOLL, M.B., Ch.B. Edin., has been appointed Junior House Surgeon at the Ingham Infirmary and South Shields and Westoe Dispensary.

SODEN, HARRY MACMANUS, L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed a Medical Inspector of Schools for Swansea.

THOMAS, HUBERT, L.R.C.P. & S. Edin., L.F.P.S. Glasg., L.S.A., has been appointed a Medical Inspector of Schools for Swansea.

THOMAS, JABEZ, F.R.C.S. Eng., L.R.C.P. Edin., L.S.A., has been appointed a Medical Inspector of Schools for Swansea.

THOMSON, CHARLES SAMSON, M.B., Ch.B. Glasg., D.P.H., B.Hy. Durh., has been appointed an Assistant Medical Officer of Health to the Cumberland County Council.

VOSPER, S., M.R.C.S., L.R.C.P. Lond., has been appointed Assistant House Physician at the Metropolitan Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRKENHEAD BOROUGH HOSPITAL.—Junior Resident House Surgeon. Salary £80 per annum and notification fees.

BRADFORD POOR-LAW UNION HOSPITAL AND WORKHOUSE.—Assistant Resident Medical Officer. Salary £100 per annum, with rations, apartments, and washing.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £120 per annum, with board, residence, and washing. Also Second House Surgeon, unmarried. Salary £60 per annum, with apartments, board, and laundry.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing. Also House Surgeon. Salary £130 per annum, with apartments, board, and laundry. Also Honorary Dental Anæsthetist.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with apartments, board, and laundry.

CARLISLE, CUMBERLAND AND WESTMORLAND ASYLUM, Garlands.—Junior Assistant Medical Officer, unmarried. Salary £130 per annum, rising to £150, with board and lodging.

CHEDDLETON, LEEK, STAFFORDSHIRE COUNTY ASYLUM.—Junior Assistant Medical Officer, Salary £150 per annum, with board, residence, laundry, &c.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physicians for six months. Salary at rate of £50 per annum, with board, washing, and residence. Also Resident Medical Officer. Salary £120 per annum, with board, &c. Also Pathologist. Salary 100 guineas per annum.

DOWNPATRICK, DOWN DISTRICT LUNATIC ASYLUM.—Assistant Medical Officer, unmarried. Salary £130 per annum, rising to £150, with apartments, board, washing, &c.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon. Salary £60 per annum, with residence, board, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon for six months. Salary £25, with board, residence, laundry, &c. Also Second Medical Officer for six months. Salary at rate of £40 per annum, with luncheon and tea provided.

GLOUCESTER GENERAL INFIRMARY AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Physician.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with board, residence, and laundry.

GRIMSBY AND DISTRICT HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, attendance, and washing.

HALIFAX UNION POOR-LAW HOSPITAL.—Resident Medical Officer. Salary £110 per annum, with apartments, rations, and washing.

HAMPSTEAD GENERAL HOSPITAL.—Physician to Out-patients, Surgeon to Out-patients, and Ophthalmic Surgeon to Out-patients.

HOMES FOR LITTLE BOYS, Farningham and Swanley, Kent.—Medical Officer, unmarried. Salary £100 per annum, with board, residence, and laundry.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, House Surgeon, and Assistant Casualty Medical Officer, all for six months. Salary in each case £30, with board and residence.

HULL AND SCULCOATES DISPENSARY.—Resident Surgeon. Salary £220 per annum, with house, gas, and coals.

ISLE OF MAN ASYLUM.—Assistant Medical Officer. Salary £150 per annum, with board, quarters, and washing.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, residence, &c.

LANCASTER, ROYAL LANCASTER INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, attendance, and washing.

LEEDS PUBLIC DISPENSARY.—Two Resident Medical Officers. Salary £100 per annum, with board and lodging.

LONDON HOSPITAL, Whitechapel, E.—Superintendent of the Out-patient Department. Salary £200 per annum, with lunch.

MANCHESTER, MONSALL FEVER HOSPITAL.—Third Medical Assistant. Salary £100 per annum, with board, lodgings, and washing.

NORWICH, NORFOLK COUNTY ASYLUM, Thorpe.—Junior Assistant Medical Officer, unmarried. Salary £150 per annum, rising to £200, with board, lodging, washing, and attendance.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London, W.—House Physician and House Surgeon for six months. Salary at rate of 50 guineas a year, with board and residence. Also Honorary Physician to Out-patients.

PENDLEBURY, MANCHESTER CHILDREN'S HOSPITAL.—Visiting Physician. Honorarium £100 per annum.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Surgeon.

PORTSMOUTH, ROYAL PORTSMOUTH HOSPITAL.—Senior and Assistant House Surgeon, both for six months. Salary £100 and £50 per annum respectively, with board, &c.

PRINCE OF WALES' GENERAL HOSPITAL, Tottenham, N.—House Surgeon, House Physician, Junior House Surgeon, and Junior House Physician, all for six months. Salary of two former £75 per annum, and of two latter £40 per annum, with residence, board, and laundry. Also Honorary Anæsthetist.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—House Physician (male) for six months. Board, lodging, and washing provided. Also House Physician, House Surgeon, and Senior Obstetric Assistant (females).

ROYAL NAVY, MEDICAL DEPARTMENT.—Fifteen Commissions.

SALFORD ROYAL HOSPITAL.—House Surgeon for six months. Salary at rate of £60 per annum, with board and residence.

SALFORD ROYAL HOSPITAL (PENDLETON BRANCH DISPENSARY).—Honorary Physician.

SURREY, COUUNTY OF.—Public Analyst.

TOTTENHAM EDUCATION COMMITTEE.—Assistant Medical Officer. Salar £250 per annum,

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Salary £30, with board, lodging, and laundry. Also Honorary Anæsthetist.

VIRGINIA WATER, SURREY, HOLLOWAY SANATORIUM HOSPITAL FOR THE INSANE.—Junior Assistant Medical Officer (female). Salary £150 per annum, rising to £200, with board, lodging, laundry, attendance, &c.

WEST HAM INFIRMARY, Whipps Cross-road, Leytonstone, N.E.—Medical Superintendent. Salary £700 per annum, with house, light, and coal.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Fourth Assistant Physician.

WORKSOP DISPENSARY AND VICTORIA HOSPITAL.—Medical Officer and House Surgeon. Salary £150 per annum, with rooms, furniture, coals, gas, and attendance.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Thame, in the county of Oxford; and at Borrisokane, in the county of Tipperary.

Births, Marriages, and Deaths.

BIRTHS.

EMERSON.—On Sept. 23rd, at Pershore House, Pershore, the wife of Herbert B. Emerson, of a daughter.

HODGSON.—On Sept. 26th, at Leyburn, Mitcham-lane, Streatham, the wife of Charles Hodgson, M.R.C.S., L.R.C.P. Lond., of a son.

MARRIAGES.

GLOVER—MERRIAM.—On Sept. 24th, at Union Chapel, Islington, by the Rev. Richard Glover, D.D. (uncle of the bridegroom), and the Rev. W. H. Harwood, James Alison Glover, M.A., M.D., D.P.H. Cantab., younger son of Dr. and Mrs. J. G. Glover, of 25, Highbury-place, to Katharine, elder daughter of Mr. and Mrs. Charles Pierce Merriam, of 79, Highbury New Park, N.

SEALY—COOKSON.—On Sept. 23rd, at St. Paul's Church, Clifton, Captain G. O. F. Sealy, Indian Medical Service, to Laura Mary, elder daughter of Major W. W. Cookson, R.A.

TAYLOR—MEADE.—At Christ Church, Leeson Park, Dublin, on Sept. 28th, by the Rev. A. E. Ross, B.D., Rector of Portrush (cousin of the bride), assisted by the Rev. Charles Dowse, M.A., Rector of the Parish, John Archibald Taylor, M.B., Ch.B. Edin., L.M. Dublin, Uganda Medical Service, to Geraldine de Courcy, daughter of the late Rev. Gerald de Courcy Meade, Rector of Killarney, and of Mrs. Meade, 17, Appian-way, Dublin.

DEATHS.

COLE.—On Sept. 23rd, at sea, near Singapore, W. Henchman Cole, M.R.C.S., L.R.C.P., Surgeon P. and O. s.s. *Malta*, aged 30 years.

PRICE.—On Sept. 21st, at 24, Gold-street, Kettering, Mary Eliza, wife of John Lowe Price, M.R.C.S., L.S.A., aged 63 years.

SWANSON.—Died at Alexandria, Egypt, of typhoid fever, on Sept. 25th, in his twenty-ninth year, George Isles Swanson, second son of Dr. Swanson, York.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE QUACK BLATANT.

Mr. C. E. Richmond, B.Sc. Vict., F.R.C.S. Eng., forwards us a particularly flagrant quack advertisement from the *Manchester Evening Chronicle*. It runs:—

ACTED AS A DOCTOR.

THE REASON FOR THESE PERSECUTIONS.

Some years ago, a Conference of Doctors was held for the purpose of deciding upon some way of crushing me, when it was resolved to refuse all my death certificates (which I had given for over 20 years, and had been accepted), and to hold an inquest upon every death.

NOW LET US SEE WHO ARE THE QUACKS.

One of my present customers is a lady I cured of Cancer of the Breast. She has since had a child and suckled it from the same breast. Still living, and mother and child will bear testimony. I forgot to say she had previously been under the legally qualified doctors, who wanted to cut it out.

1. At the present time I have a customer coming with Cancer of the Tongue. Undergone two operations, and advised to do so a third time. Came to me, and is doing well with Febrifuge treatment.

2. Man came fortnight ago. Stricture, under doctors long time, had fourteen operations, and was finally told he would have to be operated upon all his life. Febrifuge brought the water away first bottle. Is now doing well.

3. Young woman with Whitlow of the Thumb. Been in hospital, doctors wanted to amputate; almost well after three weeks' treatment.

THESE ARE A FEW FACTS—MORE IN TO-MORROW'S ISSUE.

GEORGE JACKSON,
Proprietor of Jackson's Febrifuge,
870, ROCHDALE ROAD, MANCHESTER.

We do not know whether this person was ever on the Medical Register. If that were the case we rejoice that he is now off it. If he were not, the statement that his death certificates were accepted for 20 years is a piece of impudence which deserves the attention of the Manchester registrar, for he seeks clearly to imply that they were accepted by that official. Mr. Richmond in a covering letter expresses his indignation at the fact that qualified practitioners of medicine have no protection against the competition of such ignorant quacks. As we have pointed out over and over again, the great share of responsibility lies with the newspaper proprietors. The experience of other countries and other ages renders it almost impossible to hope that medical practice by unqualified persons can ever be adequately suppressed by law. But it is within reason to hope that some day Parliament may see fit to forbid the insertion of their monstrous claims in the columns of newspapers.

A POINT IN MEDICAL ETHICS.

To the Editor of THE LANCET.

SIR,—Noticing a letter written by an M.R.C.S. and L.R.C.P. to you, I should rather like to call attention to an incident which came under my notice and which in some respect bore a resemblance to this particular case. A medical man called at my office and we conversed for about half an hour on the subject of the purchase of a certain practice. I was in a position to give him particularly full details of the practice as the vendor was personally known to me and had called on several occasions respecting the proposed sale. The would-be purchaser, having obtained all details, visited the practice in question, and then decided, for some reason, not to buy it.

To my extreme surprise I afterwards heard that the very man who had obtained particulars of the practice had started on his own account within a very short distance of the would-be vendor's house, and subsequently the vendor writes a letter to me stating what has happened, and I, in reply, advised him that it would be absolutely impossible for him to sell fairly, anyhow for the present. It was particularly unfortunate for him, as his health was bad and necessitated him leaving the practice to recuperate for weeks at a time, which fact I had carefully pointed out to the man who received particulars of the practice from me. (The intending vendor having since died, in a sense confirms the bad state of health he was in previously.) The action of the doctor who had the particulars from me of course rendered it impossible for the would-be vendor of the practice to transfer it, as any intending purchaser going down to the place would at once notice that there was a practitioner close by, and his first question would probably be, "How long has he been there?" or the vendor, if he were not asked such a question, would, if he were an honest man, inform the intending purchaser that his neighbour had only recently started. Agreed that it is somewhat hard for a man to be debarred from practising in a town because he has particulars of a practice there, yet at the same time it seems absolutely impossible to me for a man to conscientiously "put up his plate" in the said town should he have received fully discussed particulars of a practice for sale, and particularly in the instance of a man who was in reality selling his practice because his health would not allow him to continue his practice with any comfort to himself or carry out his duty to his patients. Thinking that you might like to hear another view on the same unquestionably important subject and apologising for trespassing on your valuable space,

I am, Sir, yours faithfully,
Sept. 26th, 1908. A MEDICAL AGENT.

EARLY ENGLISH MEDICAL BOOKS.

To the Editor of THE LANCET.

SIR,—Concerning early medical books in English I did not suggest that the "Governal of Health" was the earliest English "work." I said "book," which, I think, means (whatever may be the dictionary definition) a printed work. I should not term a manuscript a book, for although it may be divided in sections called "books," in every catalogue I receive a distinction is made between manuscripts and books. With regard to the earliest manuscripts being of the fourteenth and fifteenth centuries, surely this is a mistake. To quote only one instance: there is a collection in three volumes of early Saxon medical works, entitled "Saxon Leechdoms," which are certainly much earlier.

I am, Sir, yours faithfully,
Sept. 28th. OSCAR JENNINGS.

THE "LITTLE LEARNING."

THE following extract is from the leading columns of a provincial newspaper, for unearthing which we are indebted to the *Guy's Hospital Gazette*. The versatile writer was seeking to mould his readers' minds on the problems raised by Mr. Francis Darwin at the recent meeting of the British Association for the Advancement of Science. He asks:

> "What is ontogeny? It is, we presume, a process of development, either in plants, in the lower animals, or in man. The epigenetic point of view, we may similarly surmise, is that of those who hold that the germ of an organism does not pre-exist in the parent, but is brought into existence by the parents' powers of procreation.
>
> "Here, again, we pause to inquire who and what are the somatists? They are those who believe in the inheritance of acquired characters. The designation, which is new, is rather far-fetched, but has a certain applicability, soma being the juice of a plant offered in libation to a Hindu god to strengthen him in his fight with the demons. It is identified—and here its applicability comes in—with the invigorating and immortalising principle in nature."

It is true that the modern journalist is expected to have a range of information universally wide, if of no appreciable depth, but the letters to the editor which the above contribution to the thought of the age must surely have called forth may perhaps give its writer pause before he again rests so pretty an interpretation upon the single authority of an encyclopædic dictionary.

THE MYSTERY OF THE LAW.

To the Editor of THE LANCET.

SIR,—Two years ago the wife of a tradesman called me in to her husband who was suffering from pernicious anæmia. After four months he died and the widow went away without notice. After some time I found her living in a private house with an aspect of great comfort. She expressed regret and paid about a quarter of my account. To further applications she was deaf. Acting on the advice so liberally bestowed upon us in the columns of the daily press I took out a summons. As I know that solicitors consider debt collecting beneath their dignity I did this personally. Her solicitors then wrote offering half of the amount of my claim in settlement. Secure in the justice of my case I declined this and went into court. To my utter astonishment the county court judge decided that I had no claim, but advised the widow to make me "a small offer." I make no complaint of the judge's ruling. I suppose that he gave me good law, but where is the equity or the sense? If it had been a curable case the man might perhaps have paid me. As it was a hopeless one, demanding close attention and one consultation, I am entitled to nothing.

I long for the happy days of the nineteenth century, when people paid their doctors.

I am, Sir, yours faithfully,
RETRORSUM.

A THEORY CONCERNING THE RELATION OF BACTERIA TO DISEASE.

To the Editor of THE LANCET.

SIR,—Diversity of opinion inevitably tends to the advancement of science, and a new theory, even if it be wrong, affords fresh material for reflection and often throws new light on some obscure doctrine. The influence of bacteria in the causation of disease has of late years been generally recognised and in many instances the presence of bacteria has been considered the sole proof of the existence of a specified disease. The diagnosis of disease would indeed be simplified if for every ailment a definite bacillus could readily be detected, but practical experience has amply demonstrated that this simple method of arriving at a correct conclusion has not as yet been perfected. But even granting specific bacteria existed in every disease and were capable of being recognised, very slight advantage would accrue,

for the simple reason that bacteria do not exist in the early stage of disease. Again and again bacteriological examination has yielded only a negative result, and only when the physical signs and symptoms have removed any vestige of doubt about the diagnosis has it afforded any reliable diagnostic evidence. The question naturally arises whether the skill of the bacteriologist is at fault or if the non-existence of bacteria is the true explanation. Presumably the latter solution is correct, since the bacteriologist is capable of recognising the bacteria in the later stages of disease and would be able to do so in the early stage if the bacteria were present. Every man in general practice has come across cases of doubtful diagnosis in which bacteriology has afforded only negative evidence and has probably observed that it is not until the signs and symptoms are pronounced that the detection of bacteria verifies the already made diagnosis. It is true the bacillus of diphtheria is frequently found before the diagnosis is made, but it is possible and even probable that a lack of experience in the recognition of the disease is the true explanation of the uncertainty.

It is well known that bacteria of disease are constantly being either inhaled or swallowed without producing any evil results, and the fact is explained by the suggestion that the system is capable of resisting disease, that the soil is unsuitable, or that the conditions are unfavourable. It follows, therefore, as a fair deduction, that bacteria cannot flourish in a healthy subject, and conversely that bacteria can only develop and continue to exist in diseased surroundings. In other words, bacteria thrive on disease, live on disease, and eat up disease. Consequently, unless the disease continues to progress, the bacteria consume, remove, and cure the disease.

On these data the theory is advanced that disease first occurs (it is beside the question to explain the cause), that bacteria are a subsequent development, and that bacteria are nature's remedy to cure the disease. Any attempt, therefore, by opsonic treatment to render the bacteria more palatable to, and less capable of, resisting the phagocytes is opposed to nature. Surely this theory explains why so many diseases, irrespective of treatment and often without any treatment, get well of themselves.

I am, Sir, yours faithfully,
Sept. 24th, 1908. G. SHERMAN BIGG, F.R.C.S. Edin.

PUBLIC HEALTH AS AN OPTIONAL SUBJECT FOR THE DIPLOMA OF F.R.C.S. EDIN.

To the Editor of THE LANCET.

SIR,—Although I have no personal experience of the examination, it may be of use to your correspondent "Diploma" to know of a book entitled "Medical Questions set at the University of Edinburgh, Royal College of Physicians, Edinburgh, Royal College of Surgeons, Edinburgh, and Faculty of Physicians and Surgeons, Glasgow, for several years." 1908. Edinburgh: John Currie. Price 2s. Here, at p. 211 *et seq.*, he will find a number of papers set in Public Health as an optional subject for the F.R.C.S.

I am, Sir, yours faithfully,
Sept. 26th, 1908. M.D.

THE SPREADING OF INFECTIOUS DISEASE.

AT Margate petty sessions recently Mrs. E. M. A. Norton, the wife of a hotel-keeper in Lambeth, was convicted and fined upon two summonses in consequence of having removed her child from Margate to London when she was aware that he was suffering from scarlet fever. The defendant went to Margate with members of her family, including her son, aged about three years and went into lodgings. On the next day the child became ill and was seen by a medical man, Dr. E. A. White, who, on the following morning, diagnosed scarlet fever and warned the mother that if she took the patient away from Margate, as she expressed a desire to do, she must adopt proper precautions or she would be committing an infringement of the law. The course which he suggested, that of engaging a motor-car which could afterwards be disinfected, was not acceptable on account of the expense which it would have involved, and the party, which included another child, walked to the station, the sick child being carried by his mother, entered an ordinary railway carriage without informing the company's servants that anything was wrong, and travelled to London and to their home in the ordinary way. The medical officer of health, Mr. B. Thornton, who had been duly notified by Dr. White, discovered what had been done and traced the party, with the result that the local authority took out a summons in respect of the exposing of the infectious child by carrying him through the street. The railway company took out a summons also under their by-laws for conveying him by one of their trains without informing them of his condition. The mother was fined the maximum amount upon both summonses: upon the first £5 with costs amounting to £3 5s., upon the second £2 with £1 1s. 6d. costs, subject to the alternative of one month's imprisonment.

TYPISTS' NEURITIS.

To the Editor of THE LANCET.

SIR,—I should be greatly obliged if any of your readers would favour me with any references to recent literature on the subject of neuritis affecting typists.

I am, Sir, yours faithfully,
Sept. 29th, 1908. M.R.C.S. ENG.

Gland.—Our correspondent is advised to consult his usual medical attendant.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square W.

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—J. Gray Duncanson, H. S. Cameron): at 4.30 P.M.
(N.B. The meetings of this section now take place at 20, Hanover-square.)

Paper:
Prof. Nestor Tirard: The British Pharmacopœia, its Scope and Object.

THURSDAY.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION (Hon. Secretaries—H. Beckett-Overy, W. J. Gow): at 7.45 P.M.

Papers:
Dr. J. E. Spicer: Dystocia due to Distension of the Urinary Bladder of the Fœtus, with Remarks on Renal Secretion in Utero.
Mr. Alban Doran and Dr. Cuthbert Lockyer: Two Cases of Uterine Fibroids showing Peritheliomatous Changes.

Specimens:
Dr. A. H. N. Lewers: Carcinoma of the Body of the Uterus—Vaginal Hysterectomy 15 years ago—Patient free from Recurrence.
Mrs. Scharlieb, M.D.: (1) Cancer of the Fundus Uteri associated with Malignant Disease of the Small Intestine; (2) A Broad Ligament Cyst with Twisted Pedicle; (3) A Fibroid Tumour of the Ovary.
Dr. T. W. Eden: Sarcomatous Metaplasia of an Interstitial Fibroid Tumour.

FRIDAY.

CLINICAL SECTION (Hon. Secretaries: Raymond Johnson, H. D. Rolleston): at 8.30 P.M.

Short Paper:
Dr. F. J. Poynton: Pyuria in Pregnancy and Pyelonephritis in the Infant.

Cases:
Mr. W. Sampson Handley: Separation of the Lower Epiphysis of the Femur treated by Screwing.
Dr. Stanley Green: Gastrostaxis with Gangrene of Two Fingers, Penile Hypospadias after Operation.
Dr. H. A. Lediard: Subsequent Report on a Case of supposed Multiple Sarcoma of the Skin.
(And other Cases not yet notified.)
(*The patients will be in attendance at 8 p.m.*)

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

NORTH LONDON MEDICAL AND CHIRURGICAL SOCIETY, Board Room of the Great Northern Central Hospital, Holloway-road, N.

THURSDAY.—9 P.M., Mr. S. Paget: Vivisection and its Present Relations to Medical and Surgical Science.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. A. Whitfield: Clinique (Skin). 5.15 P.M., Lecture:—Mr. P. Daniel: The Treatment of Surgical Tuberculosis by Iodoform, Glycerine, and Bier's Congestion Method.
TUESDAY.—4 P.M., Dr. H. Campbell: Clinique (Medical) 5.15 P.M., Lecture:—Mr. A. H. Cheatle: The Surgical Anatomy of the Temporal Bone (with lantern slides).
WEDNESDAY.—4 P.M., Mr. P. J. Freyer: Clinique (Surgical). 5.15 P.M., Lecture: Mr. A. H. Cheatle: The Surgical Anatomy of the Temporal Bone (with lantern slides).
THURSDAY.—4 P.M., Mr. Hutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Mr. S. Mayou: Ophthalmia Neonatorum.
FRIDAY.—4 P.M., Mr. S. Stephenson: Clinique (Eye).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations.
TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Scott: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations.
FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Scott: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 4 P.M., Mr. Biggs: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 2.15 P.M., Special Lecture:—Sir Dyce Duckworth: A Case of Ankylostomiasis.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat. 3.15 P.M., Special Lecture:—Sir W. Bennett: The Relation of Some Constitutional Conditions to Local Lesions, Traumatic and Otherwise.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

THURSDAY —4 P.M., Mr. J. Hutchinson: On so-called Soft Chancres. (Opening Lecture of the Winter Session.)

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (6th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Ophthalmic (2 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (7th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.).

THURSDAY (8th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M.).

FRIDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.).

SATURDAY (10th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily

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Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Oct. 1st, 1908.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Sept. 25	29·94	E.	0·03	76	61	54	55	56	Overcast
,, 26	29·88	S.W.	0·03	113	66	54	55	57	Fine
,, 27	29·96	S.W.	...	81	64	53	55	59	Cloudy
,, 28	29·98	S.W.	...	88	69	57	59	61	Raining
,, 29	30·17	S.W.	...	115	74	61	63	65	Fine
,, 30	30·23	S.W.	...	117	79	62	63	65	Fine
Oct. 1	30·17	S.E.	...	92	72	59	60	60	Hazy

During the week marked copies of the following newspapers have been received:—*Liverpool Daily Post, Ross Gazette, Shields Daily Gazette, Hertfordshire Mercury, Perthshire Advertiser, Ardrossan and Saltcoats Herald, Oxford Times, Referee, Liverpool Courier, Belfast News-Letter, Evening Chronicle (Newcastle-upon-Tyne), Reading Mercury, Dumfries Courier and Herald, Surrey Advertiser, Wimbledon Gazette, &c.*

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